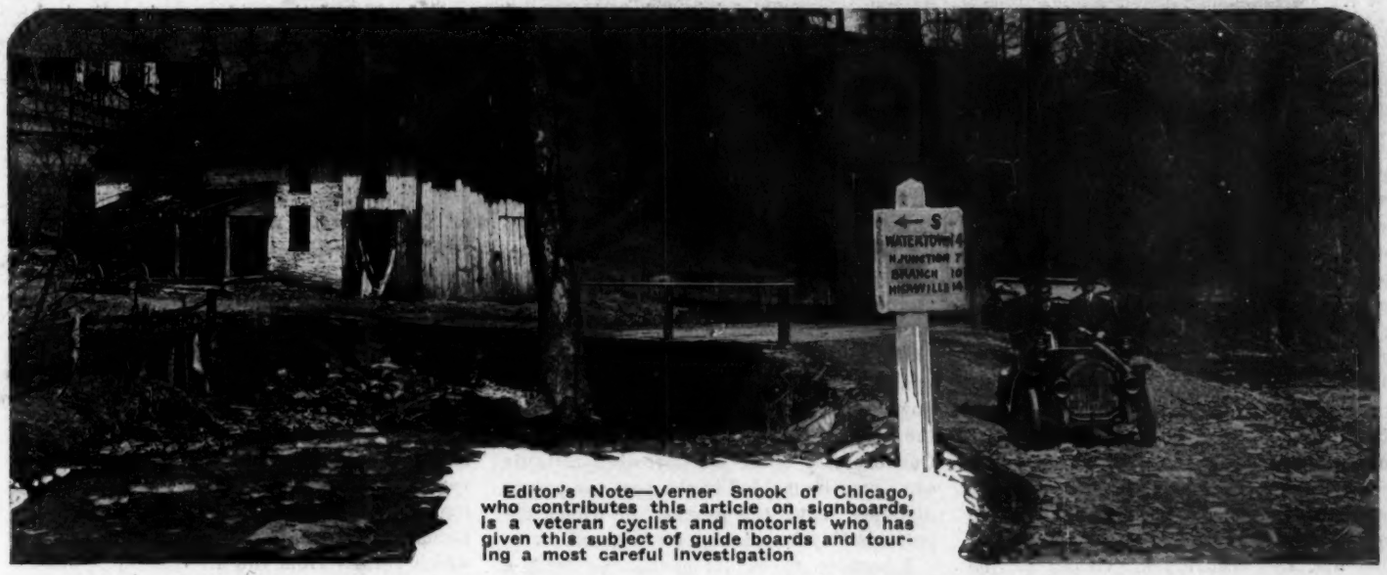
VOL. XIII No. 3 CHICAGO, JANUARY 16, 1908 $2.00 PER YEAR

MOTOR AGE

SIGN BOARD CAMPAIGN URGED IN ILLINOIS



Editor's Note—Verner Snook of Chicago, who contributes this article on signboards, is a veteran cyclist and motorist who has given this subject of guide boards and touring a most careful investigation

GOOD EXAMPLE OF A SIGN BOARD PROPERLY MARKED AND PLACED SHOWING DISTANCES AND DIRECTIONS FROM TURN

NUMEROUS letters, interviews and suggestions, pertaining to crossroads signs, have been published in the Chicago papers during the past year or more. I think the guide post law of Illinois was not mentioned in a single instance, but this act should be the foundation for this movement for signs. Therefore, I shall quote the law, and make some comments on the statute and its relation to the whole people, whom it concerns directly, and the motorists and cyclists and other highway travelers to whom it is of special importance. The law, page 1586, paragraph 5, reads as follows: "Revised Statutes, State of Illinois—Duties of Highway Commissioners. To cause to be erected and kept in repair at the forks or crossings of the most important public roads a post and guide board, with plain inscriptions thereon in letters and figures, giving directions and distances to the most noted place to which such roads may lead."

Paragraph 70—"For destroying or defacing any guide post, the offender shall forfeit a sum not less than $3, nor more than $50." Page 1602, paragraph 89—"Penalty for neglect of duty. If the commissioners shall neglect or refuse to perform any of the duties enjoined on them by this act, they shall severally or jointly forfeit not less than $10, nor more than $50, and may be proceeded against severally or jointly for the recovery of such forfeiture before any justice of the peace in the proper county having jurisdiction."

This law provides for the erection, protection and maintenance of the post; it is good enough. The non-enforcement of this law is a manifestation of our inherent national weakness—a dormant public conscience and lack of respect for law and constituted authorities. From a patriotic point of view alone, this law and all laws should be enforced. Morality, utility and state pride demand the execution of this law; its observance by the highway commissioners may be secured by the active co-operation of those of our citizens who think that all laws should be administered, and particularly by the united efforts of the motorists and cyclists, who are directly interested and desire its immediate enforcement; provided, however, that they may be willing to pay the price, namely: men, money and effort. It may be necessary to make a test case and secure a supreme court decision in order to compel our public servants to do their plain duty. Should the present law ever be found defective, another and better law should be enacted and rigidly enforced.

SIGNS SHOWING INTERMEDIATE DISTANCES

During the past 18 years I have traversed upon a bicycle all the main roads extending from Chicago, some as far as Kansas, Missouri, Wisconsin, Indiana, etc. Missouri is fairly well equipped with crude posts, so is southern Wisconsin and portions of Indiana. A legal guide post is seldom seen in Illinois. What few we

SIGN MARKING AN INTERSECTING ROAD

may have are unworthy of the name. I have toured over the highways of Ireland, Scotland, England, Holland, Belgium, Germany, Switzerland, Italy and France. I found each country equipped with guide posts; wood, stone and iron are used. A few of the granite mile posts erected centuries ago by the Romans in the Old North road between London and Edinburgh are standing today. Progressive France has given to the world its best roads and guide posts. They are about the size of a Chicago gas post, and made of cast iron; the board is cast iron, the letters are raised and painted white, the board is painted blue and the post black. Owing to the presence of guide posts throughout Europe I was enabled to ride 3,500 miles without missing my course by more than a few miles. I think the motoring interests and cycling clubs should get together and map out a campaign of enlightenment, having for their ultimate attainment full compliance with the law regarding guide posts by the highway commissioners and the placing of the best guide post in the world at the intersection of all main roads in Illinois. At this time the above mentioned organizations can be of valuable assistance to the people by helping the highway commissioners in complying with the law in a manner which will prove satisfactory to the traveling public.

I am satisfied that under the law and conditions guide posts must be erected by the people and not by individuals or class interests, as contemplated by some. Such a course would be impolitic and futile. To obtain harmony and uniformity, one style of post and board should be selected and used exclusively throughout the state. To fully equip our roads would require about one post per square mile, and an initial cost of but a few cents per acre would obtain the best guide post that could be designed, one that would be practically imperishable and require no outlay for upkeep, and be a source of pride to the people of this great commonwealth. I am advocating the use of a cement post and potter's clay board, first, and a cast iron post and glazed cast iron board for second choice. A cement post is made of cement and sand, of any size, color or design wanted; four small iron rods are imbedded in it lengthwise, which makes it strong and non-breakable; it will not rust, rot or burn, requires no paint and if made of the best cement it will last for generations. One or more short non-corrosive metallic arms may be molded in the post the proper distance above the ground, to which the potter's clay board may be fastened.

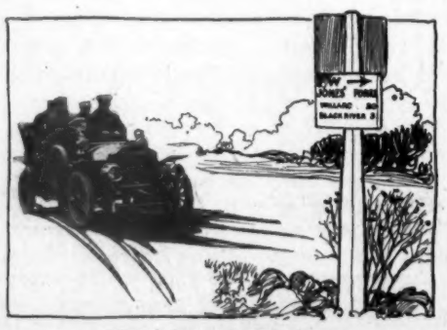
I purpose to use in connection with a cement post for a signboard a slab of potter's clay—the kind our jugs and jars are made of and called stoneware—of the desired length, breadth and thickness; it may be bolted to the post, or arms of post, or attached in the manner described below for iron boards. I would use light warm gray for the color of the board, and a dark color for inscriptions. This slab would be fired and lettered and glazed, which would render it impervious to the action of the elements.

Now for the method of inscription, etc. I would place a narrow line near the edge of the board and near the top of the board I would place an arrow pointing north, south, east or west as required; under the arrow I would place the names of the next three towns, and the name of an important town or city, to which the road would lead. The names would be placed in a column; opposite each would be placed in figures the distance. On the reverse side of all boards I would place arrows, beneath them the words north, south, east and west, as the boards may require, and set the post squarely with the compass in all roads, so tourists could not become confused regarding the point of the compass, which is liable to beset any traveler in a strange land, especially on cloudy days, and in the woods and after dark.

To explain this method of inscription more fully, at the bottom of all east boards, between Elgin and Chicago, I would place the name Chicago for principal town, and at the bottom of the column on all west boards the name Elgin, with distance opposite, and so on throughout the state. Tourists arriving at this road, from north or south, at any point, would notice at once which way to go for Chicago or Elgin, and also the distance. Otherwise, they may be in doubt as to its being the Chicago and Elgin road. Now this method of inscription will tell you where you are, where you came from and which direction to go to reach your destination, also the points of the compass, a guide post that actually guides.

For some of these ideas and methods I am indebted to Europe. I offer them for the consideration of the people. If we can obtain something better, we should do it. I think cast iron the only other material worthy of consideration in making a guide post and board. An iron post could be cast with short arms, containing grooves or sockets, into which one end of the specially-shaped cast board may slide and be held in place, like the side piece of a bedstead is retained in position, obviating the use of bolts. This method of attachment is used in France today. A cast iron board should be made with roundish corners and edges, at least three-quarters of an inch thick, and entirely coated with the best glaze used in this work, to prevent the air and moisture from reaching the iron and destroying it by oxidization. Enameled steel signs are destroyed by rust, which results from the air coming in contact with the iron through cracks and holes in the enamel which may be caused by rough usage, or the unequal expansion and contraction of the steel and enamel, resulting in slow oxidization of the iron beneath the enamel, causing it to fall off. A potter's clay board cannot be destroyed in this manner, since it is unchanged by atmospheric conditions. The Romans used potter's clay for this purpose centuries ago. Cast iron posts should be set in concrete and painted once a year, or they would soon decay from rust.

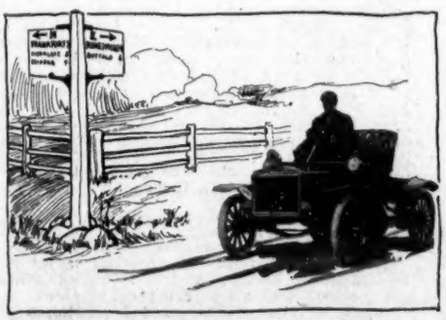
Experience has taught me that it is comparatively easy to get into an unvisited town or city, but difficult to go out on one's course—in the absence of proper guide posts in the town—without the incon-



TWO SIGNS ON ONE POST

venience of asking a number of strangers numerous questions. This is one of the most annoying features incident to American road travel. France has placed signboards in its towns and cities to direct the highway tourists. Today Chicago comprises an area of about 201 square miles, and has within its borders many miles of intersecting driveways, frequented during the summer months by numerous motoring parties from the country and adjoining states, and there is not one guide post in our boulevard system to direct our visitors in and about and out of this city on the road they may wish to go. I think the motoring interest and others should begin operations in this city, next the county, then the state. The officials of the several park systems should be interviewed and induced to erect a suitable guide post at the intersection of all main boulevards and divergent driveways in the various parks under their management. These posts should be a continuation of the posts used in the country roads, and like them should display names of towns, directions and distances. At present Jackson boulevard and Michigan avenue is the converging and diverging point for motor travel in and about Chicago. I would place the first post there, to which I would attach three boards bearing inscriptions somewhat as follows: North board, top line, Michigan avenue; below, Lincoln Park, Evanston, Wilmette, Winnetka, Glencoe, Highland Park, Fort Sheridan, Milwaukee; west board, top line, Jackson boulevard; below, Garfield park, Douglas park, Humboldt park, Oak Park, Riverside, Joliet, Aurora, Wheaton, Elgin; south board, top line, Michigan avenue; below, Washington park, Jackson park, Blue Island, Hammond, Crown Point, LaPorte. Boulevard signboards should not be more than about 6 feet above ground, that they may be read after dark by the aid of a vehicle lamp or lighted match, if necessary. I regard all this talk about illuminating these signs premature and impractical. These boards should be attached to a post, specially made for this purpose and not fastened to other posts, trees, buildings, etc. The lettering should not be too large, say for top line 2 inches high, half block style, and 1¼ inches high, same style, for names of towns, figures, etc.

France uses smaller letters than these.



STRAIGHT CORNER SIGN

REMINDERS PLACED ON LONG, LONELY STRETCHES

I would suggest light buff or warm gray for color of board, and a dark color for letters and figures. The ordinary blue sign is commercial, commonplace and presents a violent contrast, and is not readily seen after dusk. I am fully satisfied we need these posts and boards, now that we have decided for a Greater Chicago. Our boulevard system is incomplete without them, and fails to serve the people as it should. With these boards to guide us from park to park and from town to town, and with some other improvements, our boulevard system would be one of the best in the world. The next move should be to enforce the law in Cook county outside of Chicago. We must begin at home first.

CHICAGO MAKES PLANS

Chicago, Jan. 14—The promotion of various road contests during the season just past has convinced Chicagoans that the signboard question is the most serious confronting motorists outside, possibly, of good roads. The ease with which a tourist can be lost through inability to get accurate information concerning the turns and twists of the road he is following and the trouble it is to find a farmer who knows the routes have become so apparent that the Chicago Motor Club has determined to make this the main plank in its 1908 platform. With this idea in mind a committee of ten, consisting of Chairman Joseph V. Lawrence, Walter L. Githens, William H. Mason, Norton H. Van Sicklen, Jr., Oliver Temme, H. P. Branstetter, Berne Nadall, E. Q. Cordner, Harold Vorce, and W. R. Johnston, has been named and already the work is well in hand. This committee is prepared to spend between $2,000 and $3,000 this year erecting signboards. It will not endeavor to plaster the country with tags; rather an effort will be made to thoroughly mark two or three of the more important routes and do it well instead of trying to do the entire job in one season. The signs that will be put up will be of a permanent character and at the present time Chairman Lawrence is consulting with practical engineers regarding the proper material to use for posts. The Chicago Motor Club is about to appropriate $1,000 for signboard work and as much more is in sight in other quarters. Some time ago the Illinois signboard commission was created and it started out with brilliant prospects. More than $1,000 was raised by popular subscription, and for a time it looked as if the thing would be a go. Prominent citizens of Chicago came to the aid of the commission with substantial checks and with a bank account back of it, the commission ordered a lot of signs. The various routes were laid out and statistics gathered, but by the time the posts got here the enthusiasm had waned somewhat. Finally late in the summer the Chicago-Valparaiso route was marked, and several months later one or two more. Then the commission got busy in other directions and the movement was allowed to die a natural death, although there was some $600 in the treasury and a fine stock of signs to put up. Now the Chicago Motor Club has jumped into the breach. It has arranged with the signboard commission to take up the work in return for which the commission will turn over the $600. It also is expected the Chicago Automobile Trade Association, which had a prosperous year through being a partner of the motor club in the promotion of the big local events, will assist with a substantial sum. This ought to give Chairman Lawrence a nucleus and with one or two routes properly marked as object lessons he will solicit the motorists of Illinois to each subscribe $1—no more, no less—in return for which will be sent one of the new route books which the committee will compile. It is thought there are several thousand in the state who are enough interested in this work to come up with a donation.

NOW TRIPLE CENTURY

Chicago Motor Club Announces 1200-Mile 4-Day Reliability Run for June—Other Tests

Chicago, Jan. 11—When the Chicago Motor Club ran through to a successful ending a 600-mile reliability event in which the contesting cars were required to do 200 miles a day the sporting world wondered, for it was the most strenuous test to which the American motor car ever was put—at least so far as distance in a day was concerned. So well and so easily did the thirty-five cars reel off the double centuries that the new contest committee of the motor club believes it possible to increase the distance one-third and demonstrate more forcibly than ever the capabilities of this type of vehicle. Acting on this belief, the contest committee, consisting of Charles P. Root, Joseph V. Lawrence, H. P. Branstetter, Harold Vorce and Charles W. Price, yesterday made a bold stab and decided that the club's 1908 reliability shall call for the cars to do 1,200 miles in 4 days, or 300 miles a day. The same hub and spoke plan used last November will be retained, the cars running each day on an out and home course. Dates selected for this big affair are June 24, 25, 26 and 27, but outside of that no details have been arranged.

In making up the 1908 card the contest committee advanced the season a full month and also shortened it considerably. In other words, the three classics arranged will be contested between the middle of May and the middle of August, whereas last year the first event was staged the latter part of June and the last one around December 1. The order, too, has been changed and instead of the reliability first there will be the hill-climb, which is booked for May 15, probably at Algonquin again, although that is not fully settled. Following this will be the reliability and on August 14 the economy test will take place. In addition to these three tests the contest committee is seriously considering an event in which the motor buggy can show its worth. While no date has been announced, the new affair is considered almost a certainty, the motor club recognizing the fact that now there are some thirty different makes of this type it is about time they should be taken into consideration and allowed a chance in the competition line.

Realizing the motor buggy has aroused great interest among the farmers, who are eager to see them run through the rural districts, the contest committee plans to make it somewhat on the order of the Glidden. That is, the start will be made from Chicago, and for 3 or 4 days the buggies will run through the surrounding towns, not touching Chicago again until the completion of the test.

With these three and maybe four events to handle, the motor club is counting on a busy summer and one that will be more productive of benefits to the motoring industry than even last year's, which was an exceptionally good season. In addition to this, the motor club is putting up a stiff fight to have the Glidden tour start in Chicago. If it does there will be little rest for the club members, who will endeavor to see that Chicago's reputation for doing something is upheld.

The technical committee of the club now is busily engaged in drafting tentative rules for the three events. This will not be hard, for the regulations under which the club worked last year were so satisfactory few changes will be necessary. The 600-mile reliability rules in particular seem to be considered models of their kind, for several of the big clubs in other parts of the country have decided to work under them in their tests during the summer.

SHOW WEEK FOR NEW YORK

New York, Jan. 15—Local dealers have entered with enthusiasm upon the promotion of the proposed carnival and open week, which is planned to inaugurate the spring selling season of 1908 with a hurrah. Forty-one row merchants met at the Hotel Cumberland last week and gave over the promotion of the scheme to the New York Automobile Trade Association. Its president, Percy Owen, appointed the following committee to carry out the project; John T. Cutting, Oldsmobile, who suggested the idea, chairman; Richard Newton, Stoddard-Dayton; K. C. Pardee, Maxwell; C. R. Teabolt, Garford; C. W. Wooster, Stearns, and E. V. Stratton, secretary, with an advisory committee made up of prominent motor car writers. Today the date was set for April 6. A parade, with prizes for the best decorated cars, was set for April 7, and a series of smokers at the garages and open house all along the row are suggested as likely to draw possible buyers from out of town. An effort will be made to make this an annual affair hereafter.

PLAN OPENING WEEK

Chicago, Jan. 11—Members of the Chicago Automobile Trade Association held a meeting last night and decided on an opening week for the selling season of 1908. The week of March 28-April 4 was selected, at which time the entire row will join in the movement to interest the buyers. Each store will be elaborately decorated, all the new models will be on view, the dealers will adhere to a strictly uniform advertising rule whereby each one will take the same space as the other fellow and all the way through there will be an effort made to work in harmony. Among the features planned are three illuminated parades, one for each section of the city and on different nights. While all the dealers have not yet decided to participate, it is believed they all will be lined up by the end of next week.

RACE IN GEORGIA SURE

Savannahans Accept A. A. A. Conditions for Stock Chassis Event —Rules Are Adopted

New York, Jan. 15—Special telegram—Officials of the American Automobile Association today received the acceptance of the Savannah Automobile Club of the conditions named by the racing board for the proposed stock chassis race at Savannah, Ga., the week of March 15 so the tentative sanction granted becomes a permanent one and the A. A. A. is assured of a contest along the lines it has been working.

Rules submitted by the technical board have been accepted with only one slight change, which, however, is a most important one. Instead of allowing a maker to enter a car of which he has built at least ten of that model, the revision calls for not less than 10 per cent of that manufacturer's output of that particular model, which means that every car entered in the race will be a stock proposition without any question.

The distance of the race will be approximately 300 miles and the starting order will be determined by the order in which the entries are received. The entry fee will be $500 for the first car and $250 for each additional one, the lists closing 14 days before the day of the race. It will be necessary to qualify for the race by making 1 mile over a measured course, either way, at the rate of 45 miles an hour. Four trials will be allowed and a car failing to qualify forfeits its entry fee. Salient points in the rules are as follows:

Stock car chassis definitions: To permit of entry under these rules, the chassis should be a standard chassis for the car in the class in which it is entered. Chassis to be eligible shall be so constructed and completed that without any change whatsoever it can, by adding the necessary parts, be assembled into a complete car of its kind. Said car shall be subject to sale at the list price, and orders for any number of exact duplicates shall be accepted at its list price.

Cars eligible for entry must be the product of a recognized motor car manufacturer, who during the period of one year prior to February 1, 1908, shall have built not fewer than fifty cars of all models, of which not less than 10 per cent shall have been manufactured of any model entered. Details of construction must conform to those of the regular stock chassis of the same model, or models.

The chassis may be stripped of lamps, lamp brackets, mud guards, guard irons, running boards, irons and steps, but must carry regular stock hood. The loss of the hood during the race shall have the effect of disqualifying the car.

Every car entered in this contest shall be subject to a detailed examination by a committee of three members of the technical board of the American Automobile Association, for the purpose of ascertaining that no evasion of these rules has been attempted, such examination to be at headquarters on the course not later than 3 days prior to starting in contest, and if it is found that evasions have been made or attempted, the car shall be disqualified and shall not be allowed to start. There shall be no appeal from the decision of the committee; entry fee shall be forfeited, and participation of manufacturer and driver in future events barred.

Location of engine, transmission and dash, and location and capacity of gasoline tank, and oiler shall be as per regular equipment.

Location and angle of steering wheel shall be standard, using standard steering column, gear, wheel and all steering connections.

Make of tires to be used is optional with the entrant, except diameter of wheels shall be standard.

Tread: The tread of the cars in any contest held under these rules will be that regularly employed as standard by the manufacturer entering the car.

Exhaust: Cars competing in this contest shall have a horizontal exhaust pointing backwards and having its rear end sufficiently high to prevent throwing up dust. Should the entrant elect to exhaust through the side of the hood, he is given this option.

No weight limit.

Entrant has privilege of using shock absorbers.

No restrictions as to ratio of gear.

All cars entered in this contest shall be manned by drivers and mechanicians who are citizens of the United States.

Occupants of cars may be changed, if necessary, during the contest, such changes whether of driver or mechanicians, or both, to be effected only at the places specified for repairs and refills.

All repairs and adjustments to be made on running time.

No extra parts to be carried on cars, except tires.

All repairs to be made by the occupants of the car, including tire replacements.

Filling of gasoline and oil tanks by outside help will be permissible.

Gasoline, oil and water to be cared for by each contestant. This means that the entrant of each car is to provide his own stations for gasoline, oil and water supply, subject to the approval of the controlling committee.

No car shall be entered in this contest which has a greater maximum piston displacement than 575 cubic inches.

No entry shall be accepted in the name of any other than the bona-fide manufacturer of the car without the written sanction of the manufacturer thereof, and his statement acknowledging familiarity with the conditions governing the contest and his assumption of all responsibility for failure on part of the entrant or his representative to fully comply with said rules.

NINETEEN ENTRIES IN

New York, Jan. 15—Special telegram—Following a meeting of the executive board today, it was decided to hold open until February 1 the entry list for the Briarcliff trophy race, to be held April 4. The racing board declined the entry of Mrs. Cuneo, who entered to drive a Rainier, on the ground that it was too hazardous an undertaking for a woman. The car probably will be driven by Disbrow. Robert L. Morrell, chairman, reports the following entries, and before another week goes by says the limit of thirty will be reached: Hol-Tan, Hol-Tan company; Renault, Paul Lacroix; two Stearns, A. W. Church; Fiat, Fiat Automobile Co.; Stearns, F. B. Stearns Co.; two Issota-Fraschinis, Issota Import Co.; Issota-Fraschini, John H. Tyson; Simplex, Palmer and Singer Mfg. Co.; Allen-Kingston, W. C. Allen; Panhard, Panhard-Levassor Co.; two Studebakers, Studebaker Automobile Co.; Dragon, Dragon Motor Co.; Garford, Garford Motor Co.; Belden, Belden Automobile Co.; two Loziers, H. A. Lozier.

TROPHY HOLDERS PROTEST

New York, Jan. 11—Sir Thomas Dewar, donor of the racing trophy bearing his name, has come over for the Ormond-Daytona meet and a fishing trip in Florida and West Indian waters. There is a possible chance, however, he will not see a race for his trophy, for Louis Ross, a former winner, and F. E. Stanley, the present holder of the trophy, claim the management of the tournament has no right to change the original rules and deed of gift by demanding any such qualification as the entry blanks require. It is certain that trouble will arise from the stand these men have taken.

BETTER ROADS THE CRY

Ohio Arouses and Is Making Extraordinary Progress in Campaign for Good Highways

Toledo, O., Jan. 11—That the Ohio legislature now in session will adopt measures destined to be of inestimable value to the advocates of better roads in this state now seems certain. The Ohio Good Roads Association held a meeting at the Century Club rooms in Columbus this week and discussed ways and means of bringing about the desired legislation. The new organization aims to enlist all interested Ohioans in the present movement. A rapid growth in the membership was announced and plans were outlined for a chain letter system of work for new members. Plans were formed for sending out committees to meet with granges and other organizations in the state and secure their co-operation. Addresses were made by J. S. Van De Boe, Paul T. Lawrence, K. R. Otis, Asa Goddard and Martin Dodge.

The meeting favored the following of the Massachusetts law with such amendments as have been suggested by experience. This law provides for a highway commission of three members, and for the educating of township officials in the art of road making. These general features were adopted for presentation to the Ohio legislature. Senator P. W. Ward this week introduced in the senate the state motor vehicle bills, as prepared by the legislative committee of the Ohio State Automobile Association. Attorney General Ellis, as well as the secretary of state, have examined the measure and given it their unofficial approval. It is thought it will pass and become a law.

Locally there will be such activity as was never known before in the history of Lucas county road building. The Automobile Club of Toledo, recently organized, has perfected its organization by the election of the following officers: President, E. D. Libbey; vice-president, W. J. Marshall; treasurer, J. M. Steenberg; secretary, A. L. Spitzer; assistant secretary, R. J. Canfield. Word was received yesterday that the club had been regularly admitted into the American Automobile Association. The alliance with the state organization was made several days ago.

The plan upon which the Automobile Club of Toledo is progressing is most original and unique. To become a member of this club does not mean that one must own a motor car or even drive one. Any person interested in the establishment of good roads and their maintenance—any person who uses the roads—any person who wants to boom Toledo and this section of the country, is eligible to membership. The name "Automobile Club of Toledo," although somewhat misleading, was adopted in order to enable the local organization to affiliate with the most powerful organizations in the country which are working in the interest of goods roads in America.

Toledo was the only city of consequence in the country that did not have some kind of good roads organization, but the vim and enthusiasm displayed by the new club seems certain to convert the highways of northwestern Ohio into a credit instead of a disgrace to this part of the state, the enthusiasts claim.

AFTERMATH OF BIG RUN

Philadelphia, Pa., Jan. 13—Despite the fact the White steamer was officially announced as the winner of the recent endurance run of the Quaker City Motor Club, everybody else who had a car in the contest seems to have extracted some glory from it. Of course the Peerless and the Studebaker people, whose cars were in the triangular run-off, are of the opinion that the infinitesimal defects which put them behind the White were really of no consequence, and that it required the most microscopic examination on the part of the technical committee to discover where any car had it on the other two. Fortunately the committee was not afraid to make a decision based on really trivial faults—otherwise the cars might have been running yet. Since the run-off Bert King, local Studebaker manager, challenged Sheridan to another run over the course, under conditions similar to those which obtained in the original contest. Sheridan refused to consider the defi of a beaten rival. Expecting a challenge to the White would in all probability be turned down, President Neel, of the Quaker City Automobile Co., which handles the Peerless, contented himself with a big "deadly parallel" ad, in which he asked the public to decide "which wins?" Neel did not challenge the White, but he wrote the Q. C. M. C. contest committee requesting that all three cars make a third trip over the course in the hope some vital defect could be discovered that would unquestionably deserve a penalty. Mr. Neel was also nettled at the eleven points penalty gathered by the Franklin on the Death Valley lap between Doylestown and Ottsville, and to show that the air-cooler can do the trick, is sending the car over the 172-mile course on 3 successive days, beginning at 7:30 this morning. The test certainly aroused the staid old city of Philadelphia.

GOOD ROADS HIS HOBBY

Indianapolis, Ind., Jan. 12—Charles W. Thatcher, who is making a cross country run in a prairie schooner drawn by two mules and a burro, has reached Indianapolis. He is traveling across the continent trying to interest the public in a highway from New York to San Francisco. In Indianapolis he is making from ten to twelve speeches each night on street corners in the interests of good roads.

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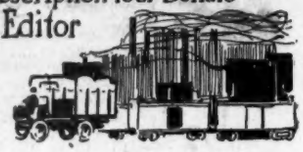


MOTOR CARS ARE DOOMED

EITHER motor cars are doomed to pass as curiosities, popular as they appear to be today, or else one little editor down in Troy, N. Y., is a somewhat mistaken individual. This particular editor sees the handwriting on the wall, but what has caused the illusion does not appear. Anyway, this is his expression of opinion:

> For the following reasons the automobile eventually will become as much of a curiosity as a bicycle is to-day: First, the high speed car deprives a majority of the public of security and comfort; second, there is no real pleasure in the sport, only an exhilaration due to rapid motion. Under the influence of speed madness a person is as irresponsible as the drunken cowboy who starts out to "shoot up" a western town; third, motion must be regulated in a manner to harmonize with the temperament of a self-possessed public. These facts may not be comforting to the people who are back of the millions of capital now invested in automobiles, but they are irrefutable nevertheless.

The self-possessed public, however, never misses an opportunity to have its self-possession removed if the removal means happens to be a motor car ride; furthermore, the public must have something to offset the temperance wave that has struck the country with such suddenness; again, the number of people riding in motor cars does not by any means constitute the majority of the people and the people who ride in cars are the ones who are being deprived of security and comfort—if anybody is being so deprived.

LATER SHOWS AGAIN

REALIZATION and determination on the show question came rather sooner than mo t people believed they would. Most makers thought the shows held in the fall were too early, but they were not sure the powers that be realized it. There has been quick realization and also a quick determination to go back to previous show dates, in the early part of the year, practically at the opening of the selling season, in order that the dealers may have some show to close sales when the public has become interested, as it usually is at show times. Perhaps the fall shows that have been held were not a sufficient criterion in face of the financial troubles that set in just as the shows opened and which naturally put something of a damper on all trading, not only in motor cars but in all other lines in the business world. It would have taken at least another trial, when conditions in trade circles were normal, to determine positively that the fall show should be branded a failure. On the other hand, a careful study of the motor car industry and the changes in conditions that have been taking place were sufficient to illustrate that the spring show will be as beneficial to the trade as the fall show if it does not surpass it. Surely the later show will be of more benefit to the agent than will the fall show, and if it is of benefit to the agent will it not be a benefit to the maker as well? Can the maker do without the agent and can the maker keep going unless the agent sends him business? Is it not, therefore, more essential to see that the agent is cared for and thus indirectly care for the maker? It would seem, in the light of all the past experience in the matter of shows and in view of the fact that selling at the fall shows was comparatively nothing, the consensus of opinion is that the move to take the shows back to the late winter months was wise.

DEMAND UNIVERSAL LIGHTING

MOTORISTS and motoring organizations will at no distant date awaken to the necessity for beginning a campaign for the establishment of laws which will compel each and every vehicle on the public highways, whether propelled by motor or drawn by horses, to carry lights at night and such a campaign can be commenced none too soon, for law mills grind slowly. Each season sees hundreds of additions to the motoring ranks, so that the streets of a city are already crowded with swiftly-moving vehicles; horse-drawn vehicles are none the less numerous, either in cities or on the country highways. The additional traffic on the public roads would seem to suggest to the authorities the necessity of framing some sort of law to compel all users thereof to protect themselves as well as to give some sort of a warning of their presence in order that accidents may not occur and thereby make possible damage suits. Even in some of the largest cities of the country horse-drawn vehicles are permitted to use the highways without displaying any form of lamp to denote their presence, whereas there are few places which do not compel the users of motor cars to make some provision to give warning of their presence or their approach. In this matter some rural districts may be found to be well ahead of the cities. In the country outside of St. Louis, for instance, one seldom sees a horse-drawn vehicle traveling the roads without displaying some sort of a light—

and there the owners of the horse-drawn vehicles do so for their own protection rather than for any other reason. Years ago the cyclists of England started a crusade for universal lighting and this crusade was carried on and passed down to the motorists to be carried to a successful finish, for on the first day of the new year the universal lighting law went into effect and is now rigidly enforced. There is of course no reason why the motorist should be compelled to carry lights when the driver of a horse is not; as a matter of fact it should appeal to the owner and driver of a horse that it is essential to his own safety to carry lights, whether it shall save him harmless from damage suits or not. It will of course require some hard work to induce law-making bodies to pass any such apparently radical legislation, but it must come and the sooner a campaign is begun the sooner such a law will be effective. Motoring organizations will find that to work for fair legislation on the use of the roads, to work for improved highways, to place guide boards, to secure universal lighting laws and to prosecute offenders against motoring regulations will secure them more recruits and more credit from the non-motoring public than all the road races and track races and beach races that can be imagined, although these have their places and are not to be discouraged. Motoring, however, cannot survive on racing; it must have behind it something more substantial—something that will appeal to those who take no interest in sports.

READERS' CLEARING HOUSE

MOTOR AGE is compelled to ask indulgence on the part of its readers and those who seek information through the medium of the Readers' Clearing House department; it happens to be overwhelmed at this particular time of the year, when motorists are going through the work of overhauling cars and preparing for spring motoring. This week four pages are devoted to this department and there is already in type enough to fill several more pages. Some of the queries require considerable study and research, so that often the answers may seem to be rather late in appearing in print. The reader will please bear in mind that all questions will be answered as promptly as the answers can be made up and space permits. Motor Age appreciates the fact that this department is an important one and of immense service to its readers and therefore welcomes each and every question put to it by the motoring fraternity.

APPARENTLY the Chicago Motor Club is not satisfied with promoting anything in the reliability line that can be classed as easy. Its latest announcement is that its next effort will be the running of a 4-day 1,200-mile reliability contest during the last few days in June. The officers believe that cars which can go through a 600-mile contest with practically perfect scores can, with attention on the part of the makers and drivers, clean up a double-distance run; they also believe that any car which can go through such a contest and come out with a clean bill will be entitled to all the credit that is given it; that if a car shows superiority over its competitors in such a contest the world ought to know it. The last affair run by this club, strenuous as it was, has not killed the goose that laid the golden egg, Senator Morgan's statement to the contrary notwithstanding, for already there have been applications for entry blanks and promises of a liberal entry list.

EARLY shows have been responsible for compelling dealers in various parts of the country to announce a show week for early spring, when the retail stores will put on good clothes and when all sorts of schemes will be worked to attract the buyer. It is unfortunate that climatic conditions will prevent the dealers in all parts of the country from joining in such a movement for the same time—this would show the world what the retail part of the motor car industry amounts to. There should be some conservatism in all this spring show week business, for there is always the possibility that matters can be overdone when conducted on the hurrah order, something that has seen its best day in the industry and something that ought to remain buried if it is expected the business is to become settled.

OHIO does not intend it shall be among the backnumbers in the matter of improved highways—as a matter of fact there is no state that is working harder for good roads than the Buckeye. It must not be supposed motorists are alone responsible for this feeling, for the farmers have shown their interest in the subject and now the legislature is to take up the work and actually do something. In the meantime the state of Ohio will simply romp ahead of some states that have not taken the road question as seriously as it should have been taken.

PERHAPS Stanley and Ross are not to be blamed for kicking about any proposed change in the rules governing the Dewar trophy, which is to be contested for at the Ormond meeting. They realize it is not difficult to frame rules that will put their steam cars out of the running. Ross has been a holder and Stanley was the last winner—so they know how things go and of course intend to have something to say about the matter. Certainly it cannot be claimed it is fair to make rules so retroactive as to give the makers of the steam cars no show or to set dates that will have a similar effect.

NEW YORKERS have come to the conclusion that the public has now been sufficiently educated in the matter of motoring to be liberal enough to permit a modification of the laws that now govern the use of cars on the highways. Horses that become frightened at the approach of a motor car are exceptions nowadays, drivers of cars are more moderate and more experienced, and it is not unreasonable to ask that a speed of 30 miles be permitted in the country. In all probability the action of the New York legislature in the matter of speed and license fees will be taken as a criterion and that other states will follow whatever lead the Empire state may make. Even New Jersey solons seem inclined to modify the state law relating to the government of motor cars and to be a little more liberal in their attitude toward motorists, who, by the way, have suffered long and patiently. If the motorists of New Jersey succeed in having their legislature pass an amended law which shall provide that all vehicles shall carry lights at night, then they may well be satisfied they have been patient and by a display of patience have convinced the lawmakers that they are not so black as they were once painted.

NATURALLY enough the Selden patent has come in for more or less talk because of the financial troubles of the Electric Vehicle Co., but it is not reasonable to suppose the A. L. A. M. will give up a fight that has cost so much and which means so much to the winner. There are any number of financiers who will be willing to pay pretty well for the chances of the patent even now. The case has not been decided and probably will not be until after it has been passed on by the supreme court of the United States, and that date is a long way off. Whatever claims are being made, it is still an open question, although of course each contending party believes its side to be right and a sure winner in the end.

ANYTHING except purely stock chassis are not to be permitted in the Savannah road race, according to the rules finally laid down, the evident desire of the A. A. A. being to see what such cars can do. At that there will be some extra tuning up that will cause pretty sharp examination by the technical committee in its endeavor to determine if the cars are of regular pattern or if they simply resemble those that are described in catalogues.

THE WEEK IN BRIEF

Chicago Motor Club announces its 1908 card, feature of which is 1,200-mile reliability test, 300 miles a day, which will be run June 24, 25, 26 and 27; motor buggy run also contemplated.

Savannah Automobile Club accepts conditions named by A. A. A. and stock chassis race will be run at Savannah, Ga., week of March 15; rules of race are announced.

Ohio is aroused to needs of better roads and Automobile Club of Toledo organizes movement which promises to materially assist in the movement.

Report of two Connecticut receivers of Electric Vehicle Co. shows assets of concern to be $1,709,000.

Frenchmen train in snow for New York-Paris test; Chicago makes plans to entertain contestants.

New Yorkers plan new motor law and at meeting in Albany they make their suggestions.

Signboard agitation in Illinois is urged; Chicago Motor Club takes the initiative.

Jerseyites, at meeting in Trenton, suggest amendments to Frelinghuysen bill.

Both Chicago and New York plan to hold show weeks early in April.

Hartford show opens for 4 days' run, with every prospect of success.

COMING MOTOR EVENTS

Italian Show—Exhibition in Turin, Italy, January 18-February 2.

Detroit's Armory Show—Seventh annual show of Tri-State Automobile and Sporting Goods Association in Light Guard armory, February 10 to 15, inclusive.

Ormond Meet—Under auspices of Automobile Club of America, March 2-9.

Boston Show—Annual Boston show, from March 7 to 14, in Mechanics hall. Chester I. Campbell, manager.

Buffalo Show—Sixth annual show of Automobile Club of Buffalo, from March 9 to 14. Dal H. Lewis, 760 Main street, Buffalo, manager.

Savannah Races—Savannah Automobile Club's road races, Savannah, Ga., March 15.

Pittsburg Show—Automobile Dealers' Association of Pittsburg show in Duquesne garden. April 4-11.

Westchester Race—Stock chassis race in Westchester county, N. Y., April 24.

New York-Paris Test—Start of Le Matin's New York-Paris trial, New York city, February 15.

Twelve-Hundred-Mile Run—Chicago Motor Club's 1,200-mile, 300 miles a day, reliability test, June 24, 25, 26, 27.

REPORT OUT ON E.V.CO.

Two Receivers File the Columbia Inventory, Showing the Assets Are Placed at $1,709,000

Hartford, Conn., Jan. 10—Halsey M. Barrett, of Bloomfield, N. J., and Henry W. Nuckols, of Hartford, Conn., receivers of the Electric Vehicle Co. in Connecticut, this afternoon filed with the superior court an inventory of the Electric Vehicle Co. The company, according to the report filed, has assets of $1,709,000. These figures, however, do not include the company's rights under the so-called Selden patent. Frederick K. C. Billings and John R. Hills, appraisers of the estate, make the following statement regarding the patent.

"This patent on a road engine is considered valuable by the officers of this company, which holds the exclusive license with the right to grant sub-licenses for the use of this patent. We are informed by the receivers that the rights of the Electric Vehicle Co. in this patent have been productive of a large net income during the past 5 years, which income has been in excess of $500,000. The patent still has 5 years to run, and if the income from this source during the next 5 years shall equal or approximate that of the last 5 years, it is apparent that this patent is a valuable asset of the company. We are unable to determine the present value of the income which may in the future be derived from this source, and for this reason we have not attempted to put a definite appraisal thereon. In addition to the above, there are more than 125 other issued patents, relating directly or indirectly to motor cars, granted between May, 1891, and September, 1907, and numerous applications for letters patent are pending in the United States patent office, the value of which we have no means of ascertaining, and we respectfully refer to list of same. We appraise these as value unknown. We also wish to call attention to the fact that, in arriving at the grand total, we have not taken into consideration the value of the good will of the Electric Vehicle Co."

The receivers have not included in the inventory an item, $13,983.81, cash on hand, and assets in other jurisdictions, amounting to $112,184.51. Bennett & Goodwin, of Hartford, representing the receivers, presented the detailed inventory. It is divided into several schedules. The land owned by the Electric Vehicle Co. is valued at $48,000, and the spur track which runs up into the company's yard is valued at $7,500. The buildings which stand on the land and which are described in detail by the receivers, are valued at $249,633, and comprise approximately 250,000 square feet of floor space. The machinery of the plant, much of which is of the latest pattern, is listed at $163,000, and other machinery classified at $40,000. Under schedule F of the inventory a valuation of $33,000 is placed on machinery for making motor car parts and a valuation of $16,000 is placed on certain patterns and motor car parts. Other items in the detailed inventory make up the grand total of $1,709,603.38. The receivers also filed with the court, the following report of business transacted by them from December 11 to 31, inclusive:

SALES		
Charges on account		$ 5,209.25
Cash		10,550.94
		$15,760.19
PURCHASE		
On account		$ 1,245.96
Cash		450.52
		$ 1,666.18
CASH RECEIPTS		
Cash on hand Dec. 11	$13,983.81	
Cash collected on account	10,146.14	
Cash on sales	10,498.99	
Cash miscellaneous	51.95	
Illinois accounts	2,738.40	
Massachusetts accounts	40.21	
		$37,459.50
CASH DISBURSEMENTS		
Pay rolls prior to Dec. 19	$12,501.10	
Pay rolls, receivers'	11,353.90	
Traveling expenses	357.30	
Petty expenditures	420.50	
Illinois receivers	2,207.50	
		$26,840.50
Cash on hand		$10,619.00

The factory has not yet resumed operations, though it is said it may do so about the 20th of this month. Several of the departments have been running to make up parts now on order.

WILL HELP GLOBE GIRDLERS

Chicago, June 13—The promoters of the New York-Paris test, which starts from New York February 15, have accepted the invitation of the Chicago Automobile Club to entertain the globe-girdlers while they are in this city. The local organization has gone even further than this, its runs and tours committee, headed by A. J. Banta, having agreed to send scouts east to pace the contestants into Chicago, entertain them while they are here and speed them on their way when they leave for the west. The Chicago Tribune has taken a hand in the game, too, having agreed to assist the Chicago Automobile Club in caring for the visitors.

TRAIN FOR LONG TEST

Paris, Jan. 1—Frenchmen are enthusiastic over the proposed New York-Paris test that some of the prospective candidates for honors in the trial have started training for the anticipated zero weather. Already a de Dion, a Benz and a Werner are entered. Collignon will drive the de Dion and he is preparing himself at Mont Genevre, where he finds the conditions he expects to encounter in Alaska. With a helper, he is accustoming himself to handling a car over snowy and ice-bound tracts and at the same time he is taking notes of carburation results. The French certainly will go into this test fully prepared and it is anticipated there will be more entries from France.

HARTFORD HAS A SHOW

Foot Guard Armory Handsomely Decorated and Representative Lot of Cars Is On View

Hartford, Conn., Jan. 14—Special telegram—After weeks of hard work, the Hartford show has become a reality in Foot Guard hall. This first show has come about only after the hardest kind of hard work and the Automobile Dealers' Association of Hartford is to be congratulated on the fine appearance of the armory. The interior is profusely decorated and it really seems, in consideration of this and the fact of the brilliant electric display, that the committee has spared no expense to make this, its initial show, a brilliant success. Everything is suggestive of motor cars, as it should be. The electric light display is dazzling, though harmonious with the decorative scheme in general. In the center of the hall is a band stand 12 feet high and from this perch the Governor's Own band pours forth melody and all enter into the spirit of the occasion. Some even go so far as to compare this local attraction with Madison Square, and one is reminded of the garden by the presence of the uniformed attendants with their natty close-fitting red jackets, red caps, white trousers and black leggings. Distributed about the hall are the cars of the local dealers and some of them show the same chassis as were on exhibition at New York and Chicago.

S. A. Niner displays the Pierce, Knox and Buick cars. The showing is most convincing. The Packard, which has a good following in this city, is shown by Brown, Thomson & Co. The same concern displays the Stevens-Duryea. Likewise does it exploit another popular car, the Cadillac. The Palace Automobile station is on the ground with a fine line of Simplex, Thomas Flyer, Autocar and Oldsmobile gas cars, also the Pope-Waverley electric. Louis Elmer, who has shouted Ford for the past few years and incidentally sold all he could get hold of, has the Detroit-made car and the Rambler. The Britton shows Maxwells. Leonard D. Fiske, who has for the past few years driven a Panhard, makes a good display of the Corbin line and is equal to the occasion, offering his patrons water or air-cooled machines.

Even Springfield has come in for a little of the honor in that the Atlas people have an exhibit. It is all two-cycle, of course, and many of the present users of the four-cycle motor linger in the immediate vicinity absorbing the doctrine. The Connecticut Steel and Wire Co., which markets a line of trunk racks, makes its initial bow to the Hartford public with the Reo. Robert Ashwell is busy expounding the merits of the air-cooled Franklin. The Capitol City Auto Co. has the Mitchell. The Post & Lester Co. shows a line of accessories; the Veeder Mfg. Co., Veeder

speed and distance-recording instruments; the Vacuum Oil Co., of Rochester, N. Y., motor car oils, and the Jones Speedometer Co., the Jones instruments. The Stuart and Lombardi speedometers are also shown. The William H. Wiley Co. has a full line of leggings, tire cases and the like; A. L. Foster has motoring apparel, George A. Snow, the Reading Standard and the Belgian four-cylinder motor cycle; the Hendee Mfg. Co., of Springfield, a full line of Indian motor cycles; the Ætna Insurance Co. expounds the virtues of liability insurance. The Harriman Marine Motor Co., of Glastonbury, shows a line of marine motors, as does the Marine Motor Co., of Bridgeport.

The new Maxim-Goodridge light electric is not shown, much to the disappointment of many who expected to see it. No display cars could have been finished in time for the show.

Owing to opposition of receivers and attorneys the Electric Vehicle Co. is not represented, its surrendered space being taken by others. A Columbia 24-horsepower gasoline runabout is shown in the lobby of Hotel Garde and attracts favorable notice. The Pope Mfg. Co. is not represented. T. Dudley Riggs makes a fine display of Isotta Fraschini and Simplex cars. The Pierce, Knox, Stevens-Duryea, Thomas, Packard and Corbin displays are exceptionally good.

The show will continue throughout the week, but the big event of all will be Thursday, society day, when double admission will be charged. In the evening the Automobile Club of Hartford will attend in a body, after which there will be a banquet at the Hotel Garde. Delegations are expected from Springfield, Worcester, New Haven and other centers where clubs devoted to motoring interests are active.

PAYING A. L. A. M. ROYALTIES

Detroit, Mich., Jan. 10—That the ranks of the Association of Licensed Automobile Manufacturers are not thrown into disorder in the least by the financial difficulties of the Electric Vehicle Co. is apparent after a thorough canvass of the Detroit factories, which include four of the most prominent members of the licensed group in the Cadillac, Packard, Northern and Thomas Detroit concerns. At each of these factories responsible officials united in the statement that royalities were being paid right up to date and that no break in the licensed group was in sight. Telegraphic advices have been received by one of the Detroit firms to the effect that up to date but one of the old group has suspended the payment of royalties and that this one did so on account of financial embarrassment, which is but temporary. At the Ford Motor Co., which has so long maintained the opposing side of the Selden patent suit, the situation was pronounced unchanged, and it is not expected that the progress of that prolonged legislation will be either impeded or accelerated by the E. V. company development.

BAY STATE DOES WELL

Massachusetts Highway Commission's Annual Report Shows the Good Roads Progress

Boston, Mass., July 13—The Massachusetts highway commission has just presented to the legislature a preliminary report of its work during the past year. It shows some interesting things. There were reported to it by the courts 1,112 instances of persons arrested for violating the motor laws, of which 1,026 were convicted. The fines for this number reached $11,560.21, it is stated.

The commission had $450,000 for roads during the year. It laid out 39.33 miles of new highway that connected with the main arteries in the western part of the state. The state now has 709.7 miles of state highways, a greater number than that of all the other New England states. As showing the great interest in good roads, there were 777 petitions for state highways received under the law from officials throughout the state. Forty new towns and cities last year availed themselves of the law asking for state aid, and their petitions alone covered 83 miles in thirty towns and eight cities. Under the law the state pays one-third of the cost.

In regard to maintaining the state roads, it cost last year $58.12 a mile. This cost is gradually increasing. The commission seeks the coming year $300,000 for building and $100,000 for maintaining roads. It wants $75,000 for special experiments for treating roads worn down by the motor cars. During the year it received $92,091.50 from the motor resignation department. With the new registrations now going on this will be largely increased.

The commission seeks more power in the matter of investigating offenses against the motor laws. It wants the power as suggested by the governor to summon witnesses, pay witness fees, have the aid of the state police when necessary, etc. During the year it revoked fifty-six licenses. It also suggests that members of the diplomatic corps be given free registration in the state. Many of them spend the summer at Lenox or Marblehead.

The annual meeting of the Safe Roads Automobile Association was held here last week and President W. D. Sohier, who is one of the most prominent motorists in the state, was reëlected. President Eliot C. Lee, of the Bay State club, was made a member of the executive committee. The figures given out by the association showed that there had been a deplorable number of accidents since the organization was formed last June, and in a number that were investigated motorists who were guilty of recklessness were prosecuted before the courts and also the highway commission. In the greater number of collisions it was found that the drivers of the motor cars were not to blame. The association is to present facts to the legislature for some new legislation. It advocates a bill making every vehicle at night carry a light of some kind. It also favors giving the highway commission power to summon witnesses, pay witness fees and administer oaths in order to investigate accidents. It wants the commission to do the investigating of accidents, which the association is now doing from voluntary contributions of its members, nearly all of whom are motorists. With the sinews of war furnished in this manner, the association believes it can push with vigor the work it has undertaken.

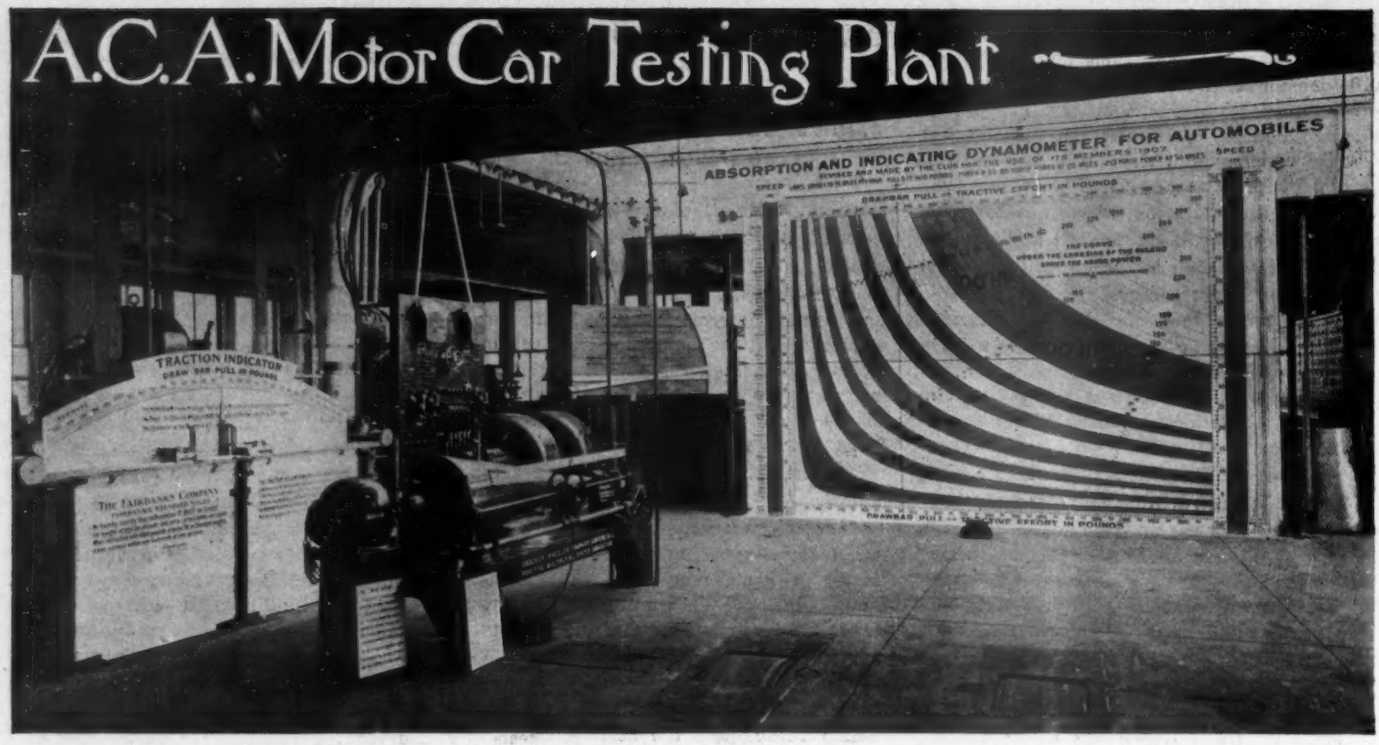
SECOND DETROIT SHOW SURE

Detroit, Mich., Jan. 11—Whether or not Detroit will support two shows is a matter which will be thoroughly tested this year. The Detroit Automobile Dealers' Association recently concluded a thoroughly successful exhibition. Now comes the Tri-State Automobile and Sportsmen's Show Association with the formal announcement that its regular show, scheduled this year for the week of February 10, will take place as usual, and that there can be no doubt regarding the completeness of the array of exhibits. A general agreement was made to exhibit at but one show and there was some doubt as to the ability of the old show to secure a complete line of exhibits, aside from the tire concerns and sundry manufacturers who were barred out of the dealers' show. Secretary McMasters, of the Tri-State association, is out with a statement, however, which sets all the doubts at rest. He states that the entire main floor has been sold for motor cars alone and that the gallery room is practically all gone, as well. A specialty will also be made of motor cycles, which were not on view at the D. A. D. A. affair. The decorative scheme of the Tri-State show is to be in maroon and white, and no expense will be spared to make the Light Guard armory, where the event will be held, a bower of beauty.

ASKS FOR CLUB RECEIVER

Indianapolis, Ind., Jan. 12—An echo of the efforts of the Indiana Motor Club to build a club house at White City, near Indianapolis, was heard a few days ago when suit was filed in one of the county courts asking that a receiver be appointed for the club. The suit was based on an account of $160.58, said to be due Robert L. Elder, who brought the suit. The Indiana Motor Club was given a beautiful site adjoining White City and made plans to complete a $5,000 club house. After the foundation had been laid the owners of White City, an amusement resort, insisted that the club house be made one of the attractions of the place. This meant that club members would have to pay 10 cents each every time they visited their club house and the site was abandoned. No attempt has been made since to resurrect the scheme and now the matter comes up in the courts for a final settlement.

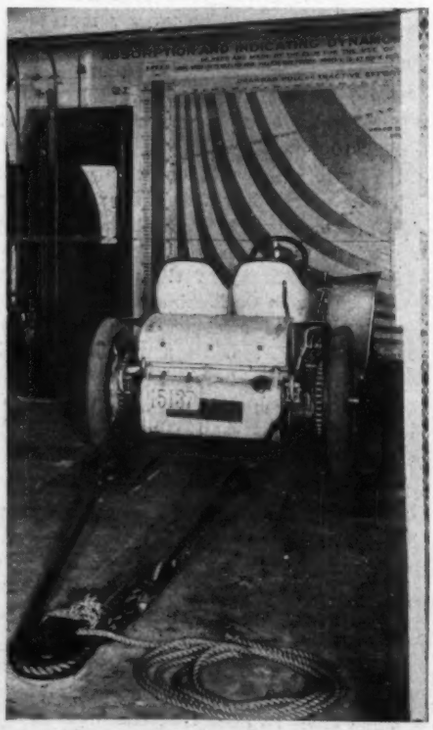
A.C.A. Motor Car Testing Plant



GENERAL VIEW OF $12,000 DYNAMOMETER MOTOR CAR TESTING PLANT OF A. C. A.

WHAT will without doubt prove to be one of the most valuable motor car testing plants in America if not in the entire world, has been installed in its clubhouse by the Automobile Club of America, New York city, and which testing outfit instantly shows without calculation on the part of the observer the speed in miles per hour or feet per second of the car under test, the drawbar pull or tractive effort, the horsepower, the car's grade-climbing ability and the power of the brakes. The testing plant, termed a dynamometer, tests all these important factors of the car while it is standing on the garage floor with the rear or driving wheels resting on the surface of two drums that rise through the garage floor. In this stationary condition a prospective buyer can find out the car's speed, drawbar pull, hill-climbing ability and horsepower of the car he desires to buy and can have this done accurately without having to traverse city streets, country roads and hillsides to discover it. The dynamometer is not a stock affair that the club purchased from some big electrical engineering house, but a testing plant designed and built specially for the club at a reported cost of $12,000. Four years ago the club requested Dr. Schuyler Skaats Wheeler, first vice-president of the club, to invent, design and build a machine for this purpose and the present testing dynamometer is the outcome of his efforts during the last 4 years.

In order to correct any misapprehensions that might arise regarding this testing plant because of its being designated a dynamometer it should be borne in mind that while the ordinary dynamometer is a simple apparatus, either a spring balance for weighing the drawbar pull required to draw a carriage or railroad car at a given speed; or a power-absorbing device for consuming power given off by an engine under trial, it is necessary in all cases to make calculations after the dynamometer readings have been taken. The club dynamometer eliminates this calculation factor, so that he who runs can read and the driver sitting in the car seat and controlling its motor during a test can at each instant see what horsepower the machine is generating, what speed in miles per hour it is traveling, what are its hill-climbing abilities and its drawbar pull. In brief it is a ready calculator or mathematician as well as tester.



CAR READY FOR TESTING

Descriptively viewed it is an assemblage of power-absorbing and measuring instruments together with an immense power chart over which move automatically-operated pointers or indicators. It carries the problem of power measurement, integration and automatic recording of the final results much farther than has hitherto been done. It absorbs and measures the car power so that at any instant during the test the already mentioned measurements can be instantly read.

The car to be tested is run into the testing enclosure and stopped with its driving wheels resting on the drums A which project but slightly above the garage floor, after which the car is anchored to the floor by rope and tackle secured around a pulley in the garage floor. The illustrations showing the car disclose the rear rope. There is another one similarly secured at the forward end of the car, which steadies the machine and allows it to be tested on either forward or reverse speeds. This is all the necessary preliminary work; the car is ready to be tested. First the motor is started and when the clutch is engaged the gear wheels begin revolving on the drums A and causing these drums to revolve. What happens next can be understood by referring to two illustrations, one showing the floor beneath that on which the car stands and where the drums A appear as well as the shafting and other mechanisms supporting them. From one end of the shaft is suspended an immense metal pendulum B. The revolution of the drums A is resisted by this

pendulum, which is not attached rigidly to the shaft carrying the drums but through a device furnishing a degree of friction which can be varied if needed. The pendulum in consequence of this revolving of the drums swings out of the vertical a distance exactly proportional to the pull exerted by the car upon the drums. The amount of this pull or tractive effort is indicated by a pointer attached to the pendulum and reaching above the floor on which the car stands. This weighing apparatus or pendulum has been tested and certified as correct by the Fairbanks company, scale manufacturer. Then comes the indication on the chart of the pendulum swinging done by a horizontal ruler C which travels up and down over the face of the chart by a wire cable moved by a small electric motor in such a manner that with each varying position of the pendulum pointer the cable is moved to correspond to its new position. The cable system is not unlike that used on each floor in large office buildings to show the exact position of the elevators in their up and down trips. In the large illustration of the chart the ruler C is showing 80 horsepower. This may be discovered by following along the ruler C until the figure 80 on the top line of the black band carrying "70 HP" in black letters is reached. Underneath the figure 80 is a short black line and immediately the ruler reaches this line 80 horsepower is indicated. The chart carries alternate broad black and white lines with "1 HP," "10 HP," "20 HP," etc. marked on the black lines, but the reader must not confuse these large figures with the smaller ones, because if the larger ones were used the chart would show slightly over 100 horsepower, which is not correct according to right reading.

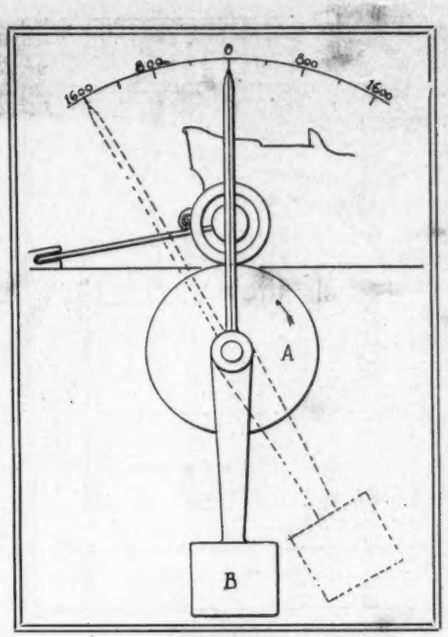
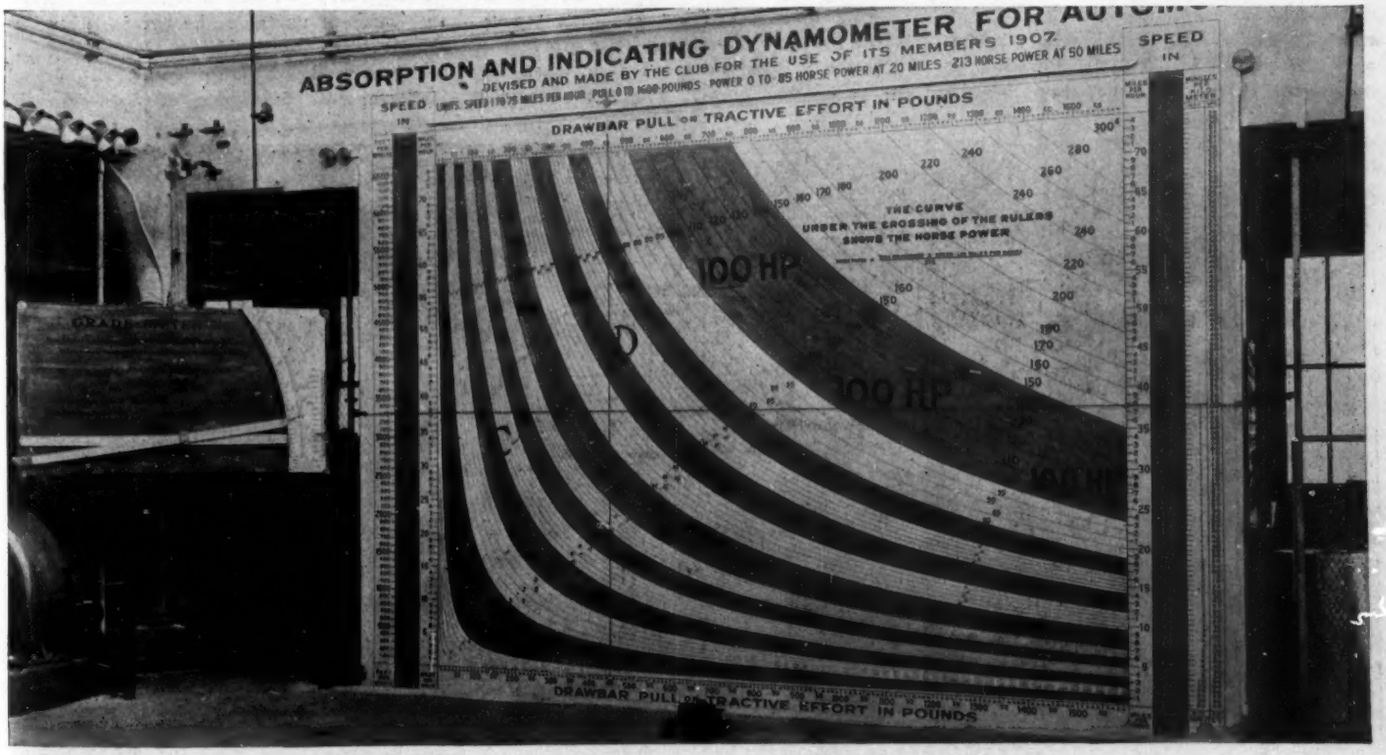


DIAGRAM OF TESTER

The more difficult problem is the measuring of the speed of the car by moving a vertical ruler D across the chart from side to side and which movement is accomplished by a special apparatus not driven by the car under test. A cone E is revolved by a small electric motor at a constant speed. To verify this speed, a bell, attached to the coneshaft, rings at each 100 revolutions or at intervals of 30 seconds. A wheel or roller F driven by the car and therefore revolving slowly or fast to correspond rolls upon the surface of the cone and is pulled by an independent motor back and forth between the small and large ends of the cone until it finds the point where it does not slip because that portion of the cone presents the same speed as the roller. This longitudinal adjustment of the roller is transmitted by a wire cable to the speed ruler on the chart, and the power required for moving the ruler is thus made independent of the motor car. In other words, none of the power of the motor car is used in operating the indicators on the chart. The method of speed measurement employed, based upon one element running at a constant speed like a clock, that can be verified, insures great accuracy. The roller, driven by the car if running at 60 miles per hour, must be drawn to a position near the large end of the cone in order to run with the cone. Whereas, if the car drives the roller at only 5 miles per hour, it must be drawn to a position near the small end of the cone. A system of electric contacts is arranged with a motor to shift the roller automatically until it finds the point where it will roll on the cone without slipping. The speed and power rulers are thus moved across the chart automatically to correspond with the speed and the tractive effort or pull that the dynamometer shows the car is making.

On the board are painted the horsepower corresponding to each different speed and pull, so that the result at each moment can be read at a glance and without calculations.

The chart is in heroic scale and can be read easily by the driver of the car. The speed of the car may be read from the chart in either of the popular ways of stating it: miles per hour, minutes per mile, kilometers, etc., by means of the several different scales provided.



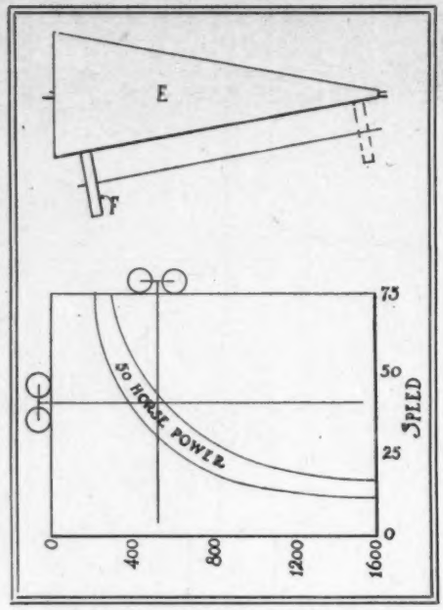
GRADEMETER CHART AND MAIN CHART ON WHICH IS RECORDED HORSEPOWER, DRAWBAR PULL AND SPEED

All of the measuring apparatus is made reversible so that when running backward the performance of the car may be measured as readily.

As a secondary apparatus, a grademeter is provided, operated by the pendulum indicator of the dynamometer. To use the grademeter the clamp is set upon the sliding scale at the point representing the weight of the car. The moving lever then assumes at each moment the angle of inclination of the grade the car would climb —if there were no wind resistance, slipping, etc.—with the effort that the car is then making. To observe a motor car coasting downhill, either forward or backward, it is necessary merely to start the electric motor on the shaft carrying the two large drums upon which the driving wheels of the car rest. The brakes may then be tested and the wheels or gears or engine may be run free—not run by the power of the car—and the relative friction loss in the principal of the car may be ascertained.

Having briefly described the testing apparatus as used by the club what appears to Motor Age as the greatest drawback is the fact that it does not take into consideration any of the many external factors that do so much to reduce car speed and consume motor power at such an alarming rate. Car owners are aware of the great loss due to wind resistance when traveling at high speeds. This loss is measurably increased if large wind shields or cape tops are used. Then, too, the contour of the car as seen from in front is a quantity to be reckoned with. One car with certain square area presented to the front develops more wind resistance than another of the same area due to the different curves of the body parts.

Perhaps no other motorist has experimented so much with wind resistance of late as S. F. Edge, who announced some months ago results



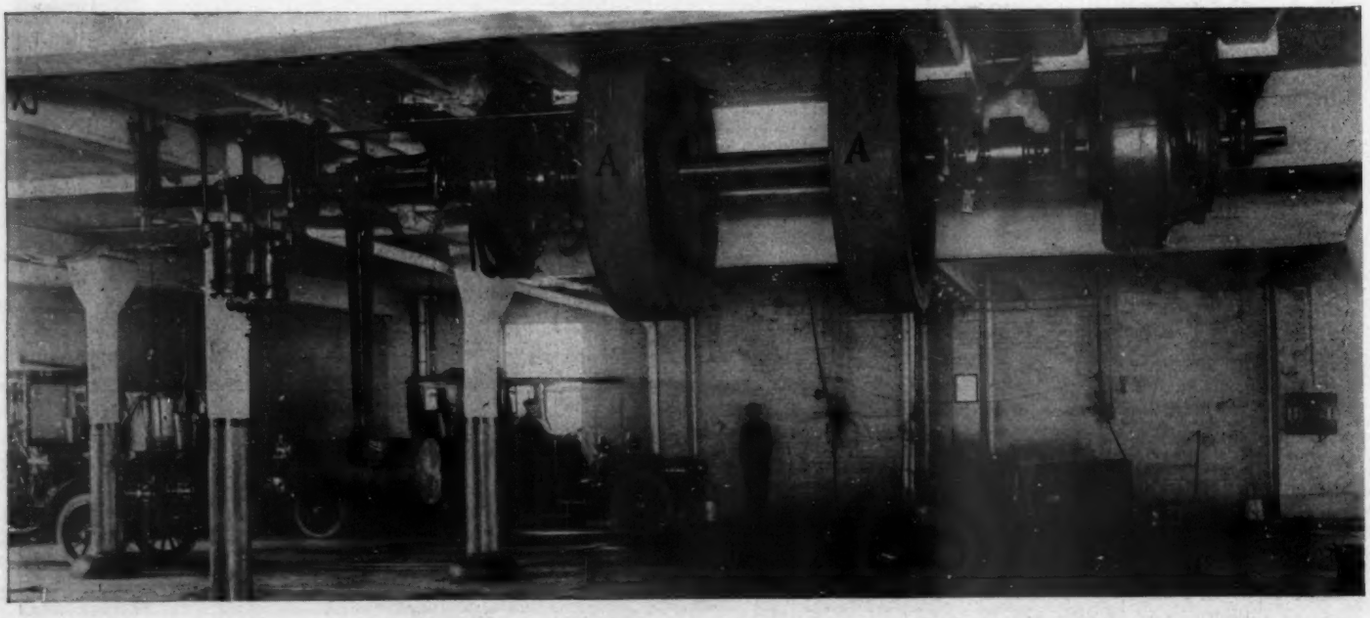
DIAGRAMS ILLUSTRATING TESTER

of early experiments but who since then has carried on additional investigations. It would be most valuable data, however, if the Automobile Club of America would make outside tests of cars showing the wind resistance qualities of cars that have been tested on its dynamometer and discover what horsepower a car will show against winds of a certain rate of miles per hour. For example the car in question when the chart photographs were taken showed almost 80 miles per hour when the wind resistance was nothing, what would this car show traveling against a wind of 30 miles per hour or a wind of 20 or 25 miles per hour? If it showed 80 miles per hour standing still in the garage what would it show when running with glass front and cape top up in the face of a 25-mile-an-hour gale?

Not only does the speed vary when the car is on the garage floor as compared with when it is traveling on the road, but the horsepower that the motor is capable of generating varies considerably. A car in motion at 80 miles per hour has a much different carburation problem than one resting on a pair of revolving drums with the forward wheels on a firm floor. Where the car is bounding from point to point on the road the motor vibration is such as to make big reductions in power. Experiments have shown that a motor well mounted will generate 10 per cent more power than one poorly mounted, and often a motor will show on the testing block 4 or 5 more horsepower than can be got out of it when it is being tested in the car.

It would be a most valuable adjunct to the present dynamometer testing plant of the A. C. A. if a series of outdoor tests were made and a relative road horsepower percentage determined. A test could be made of the speed in miles per hour with no wind, with 5 miles per hour wind against the front of the car, with 10 miles per hour, 15, 20, 25, 30, 35 and 50 miles per hour. Having made these outdoor tests the club could after testing a car on its dynamometer estimate fairly accurately what would be the probable speeds of the car on roads and in hill-climbing tests. Something of this should be done, for it is not certain unscrupulous sales agents or makers may take advantage of the occasion by misrepresenting the possible car horsepower and speed when on the road. A car that showed 90 miles per hour on the testing dynamometer might not be able to make 75 miles per hour on the road under ordinary conditions and to the novice buying a car this is a very considerable difference.

The A. C. A. has had printed blank certificate forms which when filled out show the different parts of the car tested with the results obtained. On January 6 a test was made of W. K. Vanderbilt, Jr.'s, 90-horsepower Mercedes of 1904 model.



VIEW BENEATH TESTING FLOOR, SHOWING DRUMS A AND PENDULUM B

FRANKLIN TESTS MOTOR CAR EFFICIENCY

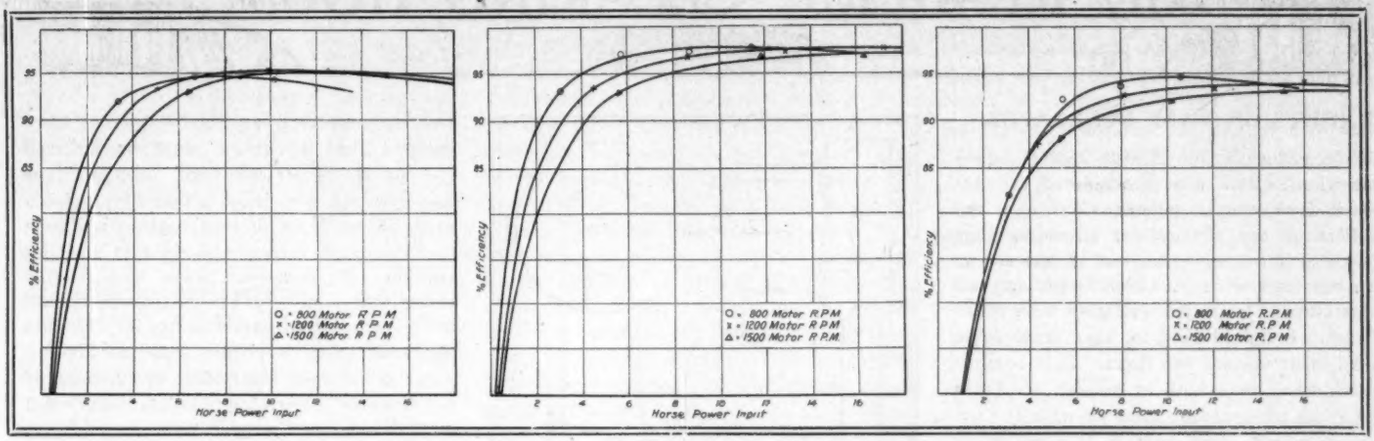


FIGURE 2—REVERSE SPEED CURVE

FIGURE 3—THIRD SPEED CURVE

FIGURE 4—FIRST SPEED CURVE

FOR the purpose of obtaining estimates of the amount of power which is delivered to the rear wheels of a motor car, the H. H. Franklin Mfg. Co. has conducted a number of tests to determine the efficiency of the various parts, including transmission, rear axle, etc., through which the power developed by the engine must pass in order that the rear wheels may drive the car. The accompanying curves are the results of over 6 months' research work. It was decided to first determine the efficiencies of the various parts, then by combining these efficiencies it was an easy matter to determine the percentage of the engine's power that is available at the rear wheels.

The efficiency of the transmission was determined by the so-called motor calibration method, a 30-horsepower direct current electric motor being used for the purpose. This electric motor was of the shunt type, its speed being controlled by passing the armature current through a water rheostat. By this means the revolutions per minutes would be kept constant through a large range of speeds. A water-cooled Prony brake of standard design was attached to the motorshaft and a series of readings was taken at different loads and speeds. From the data obtained in this manner, calibration curves were plotted showing the electric power consumed by the motor when it is delivering any given mechanical power. Then the motor was directly connected to the transmission and the Prony brake placed on the transmission shaft. A number of different loads were then applied at the brake, the speed of the motor being kept constant, and readings of the brake load and electrical instruments were made. From these readings, used in connection with the motor calibration, curves obtained as described above, the power input and the power output of the transmission could be determined. The difference between these two values gives the power lost in the transmission, while the result obtained by dividing the second by the first is the efficiency of the transmission in per cent. In this manner data was obtained for each of the three forward speeds and the reverse curves being plotted for each as shown by the curves illustrated herewith.

The efficiency of the rear axle was obtained in a similar manner except that two Prony brakes were used instead of one, one being used to replace each wheel. Equal loads were applied at both brakes and readings made as for the transmission. From the data thus obtained the efficiency of the axle for a number of different speeds and loads could be determined and curves were plotted.

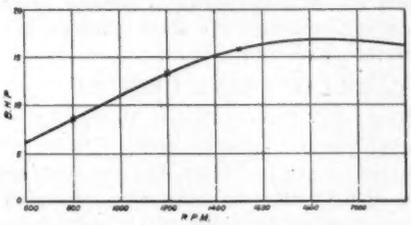


FIGURE 1—MOTOR EFFICIENCY

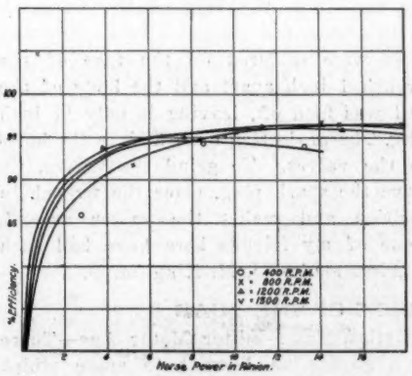


FIGURE 5—AXLE EFFICIENCY

Now having the efficiency of the separate parts of the drive, to determine its total efficiency it is imperative to combine the efficiencies of the transmission and rear axle. As stated, the power lost in the universal joints of the drive can be neglected because of the fact that both the transmission and the rear axle were connected to the driving shaft of the motor through universal joints similar to those used upon the finished Franklin cars.

The curve in figure 1 shows the maximum horsepower developed by a 1908 Franklin type G motor. This engine was taken from stock and run at various speeds, the maximum power obtainable being determined and plotted, as shown in the curve. From it we see that at 1,500 revolutions per minute, with the throttle full open and spark advanced to the proper point, the motor develops 15.75 horsepower. The data found in the table—figure 6—is computed from the various curves, and from it we see that under the above conditions with the transmission in the direct drive 14 horsepower will be delivered to the rear wheels of the car, which will be going at a rate of 32.2 miles per hour. That is, over 93 per cent of the developed power of the engine is available at the rear wheels, which means that at the tires a force of 171 pounds will be exerted to drive the car. Again with the engine running under the above conditions, but with the transmission in second gear, 14.4 horsepower is delivered to the wheels or over 91 per cent of the power developed by the engine. This means that at the tires a force of 295 pounds is being exerted to move the car, which will be running at a speed of 18.3 miles per hour.

MODEL G 1908 FRANKLIN TOURING CAR

R. P. M. of motor	H. P. of engine	Trans. mission gear	H. P. of wheels	R. P. M. of wheels	Torque at wheels	Force acting at tires	Miles per hour
800	8.5	D. D.	7.85	192	214 ft. lbs.	171 lbs.	17.2
1,200	13.25	D. D.	12.40	289	225 ft. lbs.	180 lbs.	25.9
1,500	15.75	D. D.	14.70	361	214 ft. lbs.	171 lbs.	32.2
800	8.5	2nd	7.60	109	366 ft. lbs.	293 lbs.	9.7
1,200	13.25	2nd	12.00	164	384 ft. lbs.	307 lbs.	14.6
1,500	15.75	2nd	14.40	205	369 ft. lbs.	295 lbs.	18.3

D. D.—Direct drive. 2nd—Intermediate.

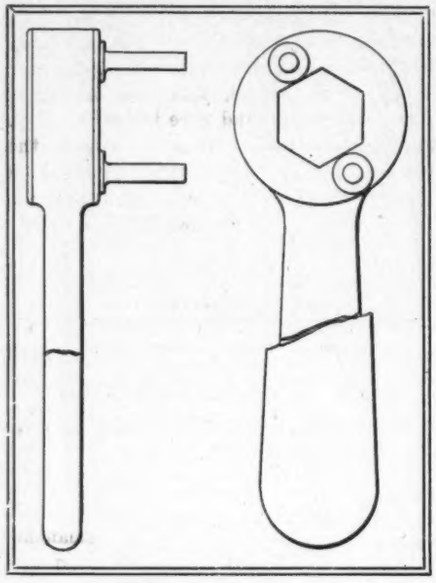
FIGURE 6

THE READERS' CLEARING HOUSE

BENEFITS OF SPARK GENERATOR

Edgewater, N. J.—Editor Motor Age—Can you explain the principle of the Atwater-Kent spark generator? I see the makers of the Elmore car advertise that they can get 2,000 miles out of one set of dry batteries with it, which is better than most storage batteries will give with other outfits. I should like to hear from some users what it does for them. Is it complicated, hard to attach or adjust, etc.? Is the same commutator used as with the ordinary coils? And how is it possible to get all that mileage?—Allen S. Ferned.

The Atwater-Kent spark generator is a device scientifically designed to draw from a battery as nearly as possible only the electrical energy necessary to ignite the charge and to keep the batteries until the energy remaining in them is too small to produce an effective spark. Its principal elements are a jump spark coil and condenser, a primary contact maker whose time can be advanced or retarded, and a high-tension distributor. There is no vibrator, for the contact maker itself breaks the circuit with the abruptness necessary to make a good spark. The distinguishing principles of the parts are four: First, only one spark is made for each ignition; second, the primary contact by whose rupture the spark is produced is exceedingly brief, no longer in fact than is actually required to build up the magnetism in the spark coil core; third, the duration of this contact is independent of the engine speed, in the same way that the contact of the ordinary coil vibrator is; fourth, contact is made and broken mechanically through a shaft driven by the engine, and a spark may therefore be obtained from a battery too weak to operate a vibrator. When it is remembered that the average coil vibrator makes from three to half a dozen sparks for each ignition, and that in the nature of the case only the first of these can ignite the charge, the principal reason for the economy of the spark generator referred to will be apparent. The mechanism by which the instantaneous primary contact referred to is produced is not easily described, but in general terms it is similar to a snap contact produced by a small spring-controlled hammer pulled out of position by a ratchet on the shaft. The ratchet has as many teeth as there are cylinders and runs at the camshaft speed. When used with a two-cycle engine, like the Elmore, it runs at the crankshaft speed if there are four cylinders. If there are two cylinders it runs at half the engine speed and the ratchet has four teeth. The ordinary commutator is not used in connection with it, but a driving connection must be made from the crankshaft or camshaft to the vertical shaft of the spark generator itself, which is mounted on the back of the dashboard. The makers furnish bevel gears or shafts with universal joints for this purpose. Probably some users of the device can state what experience they have had with it.



A Cadillac Valve Grinder

A CADILLAC VALVE GRINDER

Nashville, Tenn.—Editor Motor Age—Probably some Cadillac users will be interested to see in Motor Age the description of a Cadillac valve grinder, of which I am enclosing drawings. It is made from the small ratchet wrench used to remove the tap from the lugs of the Goodrich quick-detachable tires. Two 10-penny nails were soldered on the face of the wrench 1 inch apart and the body of the nail was filed off, leaving it only ¾ inch long. The projecting ends fit into the holes on the valves. To grind the valves, remove the spark plug, place the wrench in position and rachet the valves around. Some of my friends here have had such grinders made.—J. M. King, M. D.

RULES OF THE ROAD

Dallas, Tex.—Editor Motor Age—There is a suggestion I want to make which might be of use to people driving motor cars throughout the country, particularly in sections where they are comparatively new. I think it would be for the general good, and I know that I would appreciate it if you would print in the Readers' Clearing House columns a very short synopsis of the decisions that have been rendered by the courts in regard to use of the roads by motorists or others. For instance, I do not know that it is a law—but it is a custom and I understand that various courts have decided that a custom must be adhered to—for a driver to turn to the right to allow one who is in a faster vehicle to pass, as much as it is a custom and law that one must turn to the right in meeting another. Personally I have had trouble along this line. As I see it there should be a campaign, particularly in districts like this, to show people that one driving a car is as much entitled to the benefit of the law as if driving a mule team, and to show what is the law. The motor papers publish statistics showing how few accidents there are with machines, but no one sees them except people who own motor cars. This should be gotten into the daily and weekly papers, so that the public can see it. My object in wanting you to publish this short synopsis of the court decisions as to use of the roads is that I want to get it copied in our local papers for the education of the public at large, as well as for the benefit of one driving a motor car. I believe if you would publish this with the request that people in different localities would try and get it in their local papers, it would result in vast good to motorists everywhere.—E. M.

The legal departments of the American Automobile Association and the American Motor League, both of which are located in New York, undoubtedly have such information in hand. Rules of the road have been printed in daily, weekly and farm journals off and on for years. The trouble does not lie in the fact that the horse driver does not know enough to give a portion of the road—it lies in the fact that he simply doesn't like motor cars.

USED AUXILIARY EXHAUST

Chicago, Ill.—Editor Motor Age—I beg to submit the following for the benefit of the Flemingburg, Ky., correspondent, in regard to an auxiliary port on an Olds runabout. About a year and a half ago there appeared in a New York motor paper an article describing in detail the method used by a man who put an auxiliary exhaust on an Olds runabout engine and declared it a success. I forget the details, but there was no poppet valve used in connection with the port exhaust. For a number of years I operated two gas engines of different makes, both having port as well as valve exhaust, neither requiring any kind of valve in connection with the port. The suction of burnt gases back into the cylinder at the end of the intake stroke is insignificant when the extra amount of burnt gas relieved by the port is considered. The port must be so placed that the piston will begin to uncover it at the same time the exhaust valve begins to

open; but in order to make the port effective the exhaust valve must afterward be timed so as to open a little beyond the end of the firing stroke, and close at the beginning of the intake stroke, which may require a differently shaped cam. For a cylinder of 4¾ inches bore a port ½ inch wide and 1½ inch long should be sufficient. The usual method, however, is to divide the port into two parts, thus preserving the strength of the cylinder wall and preventing the piston rings from catching in the port.—M. J. Morrical.

REVERSING AN ENGINE

Rich Hill, Mo.—Editor Motor Age—Will you please answer the following question in the Readers' Clearing House? Is it not possible for a two-cycle engine with a fixed spark to be run either forward or backward by merely cranking it in the direction one wants it to run?—F. L. K.

A two-cycle engine of any of the ordinary types will run in either direction with equal facility, and two-port and three-port two-cycle engines, such as are employed in motor boat service, are very commonly designed to start in either direction. Most of them can even be reversed while running by proper manipulation of the ignition, if they are not turning over too fast. Two-cycle motor car engines have not, so far, been built reversible.

POINT ON WIRING

Denison, Ia.—Editor Motor Age—I would like very much to have a little information through the shop notes or the Readers' Clearing House. Is it possible to wire a four-unit vibrator coil of the Pittsfield manufacture so it will successfully work as a non-vibrator coil, the same method as is used on motor cycles? Also is there any set rule for expert handling of the spark lever on a four-cylinder car—that is, so a person can be absolutely sure it sparks at the proper point? I go by the tone of the exhaust; is that proper or not?—E. C. Chamberlin.

To wire a multiple-unit vibrator coil so it will work successfully as a non-vibrator coil requires two things. In the first place it requires some form of timer which will give a quick break, since the length of the spark produced in the secondary circuit depends in large degree on this factor. The ordinary roller and snap contact timers give a break whose quickness depends altogether on the speed of the engine, and is slow in any case. Consequently there would be required a special form of timer. The second thing required would be to change the connections of the condensers belonging to the coils, so that instead of being connected around the trembler contacts, as at present, they would have one terminal connected to the trembler, as before, and one connected with a special ground wire instead of with the primary coils. In other words, the condensers ought virtually to be connected around the timer contacts instead of the trembler contacts. The two diagrams show what is meant. Figure 1 shows the customary arrangement of wiring, and figure 2 the arrangement that would be required with the secondary circuits omitted for clearness. It will be seen from these considerations that the change proposed is scarcely practicable. If, however, a four-cylinder motor cycle timer were used, it might be managed, though the advantage to be derived from it would be questionable. The trembler contact screws would simply be screwed down to a permanent contact. The best rule for the management of the spark lever is to advance it no more than results, with a given throttle opening, in a distinct gain in speed. It is the commonest error of the novice to advance his spark when climbing a hill, with the idea that he thereby helps the engine to go faster. As a matter of fact the effect produced is precisely the contrary, since the engine is compelled to run slowly by the resistance of the grade and the early spark simply burns the charge too fast and creates negative work for the piston to overcome. A good driver will keep "feeling of" the spark advance; in other words, he will determine constantly by trial whether advancing the spark a notch or two helps the car's speed with a given throttle opening or whether retarding it causes the car to slacken, and he will open the throttle no more than is necessary to get the desired speed with the spark in the most suitable position. In general, slow speed requires a late spark and high speed an early spark. A throttled charge, however, will bear an earlier spark than a full charge. If one is running throttled on a level road at a fair speed and with an early spark and suddenly opens the throttle the spark must be retarded on account of the more rapid combustion of the heavier charges until the car acquires speed. On striking a grade the spark must likewise be retarded, both on account of the throttle being opened and because the engine will probably slacken speed. The sound of the exhaust is not the best guide to the proper spark position, partly because it will depend on the throttle opening, as well as on the spark position, and partly because the loudest exhaust will result from a wide open throttle and a very late spark.

FRANKLIN MAKES DENIAL

Syracuse, N. Y.—Editor Motor Age—Several statements in your report of the meeting of the licensed association, held in New York last week, are wrong. For example, you state that "Mr. Franklin's chief fight was for an open shop in the matter of cars being handled by other than licensed dealers." I made no fight on this question. Indeed, the subject was not mentioned in any of the meetings, and is not so far as I know a matter of contention with any member. You also state that according to the best information you could get "the Franklin demands had been fought out and defeated in the caucus meeting." This statement is also incorrect. The Franklin company contended for full detailed reports, reduction in expenses and an amendment to the by-laws. The first two were complied with, though perhaps not fully, while the consideration of the amendment to the by-laws was put over until the next meeting upon our own motion.—H. H. Franklin.

CONDEMNS CALCIUM CHLORIDE

La Salle, Ill.—Editor Motor Age—Regarding the calcium chloride discussion. Possibly James H. Rhodes & Co. refer to chemically pure calcium chloride in stating that it gives off no fumes when boiled in solution. The writer's experience with the commercial chemical—which is that generally used in radiators on account of its price—would indicate that it certainly gives off fumes and that at times these are very strong and disagreeable and certainly smell like chlorine. Another objection to its use in radiators is the fact of its strong affinity for water. In case of a leaky radiator piping or connections where solution is thrown by fan or flywheel

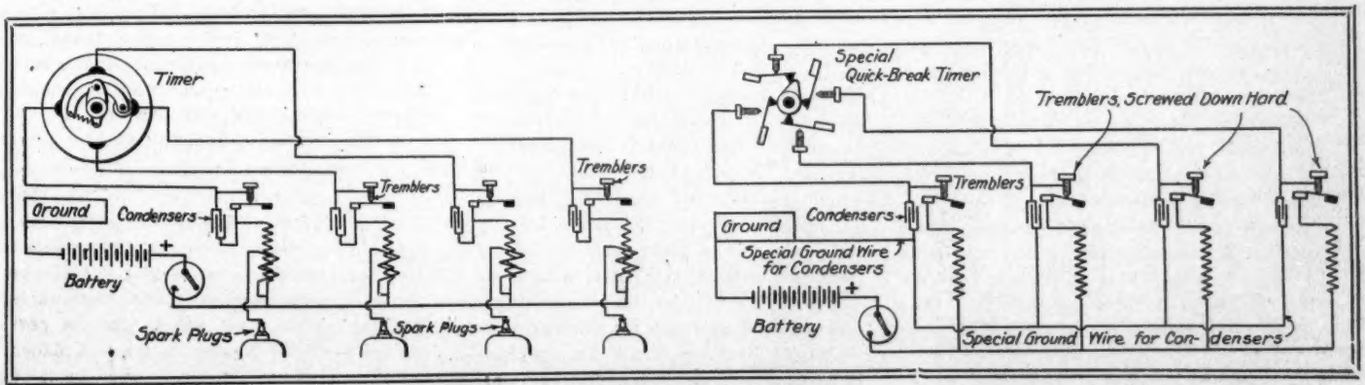


FIGURE 1 CHAMBERLIN'S WIRING DIAGRAM FIGURE 2

about the engine, the heat from the engine evaporates the water, leaving the dry salt. When cool this will, on a damp day, attract water from the atmosphere, and cause the surfaces to become wet. It is difficult to get rid of this salt from joints or inaccessible places, and the writer has had the experience of having the entire interior of his car wet in the summer from the effects of the calcium chloride used the previous winter. He also has known radiators to become clogged from the crystalization of a too strong solution. Alcohol is not open to these objections, although the glycerine commonly used in conjunction with alcohol has a tendency to soften rubber gaskets or pipe connections. Glycerine solution also if spilled about the engine will not entirely evaporate, but has no corrosive effect. There is no question that a water-alcohol-glycerine solution, while a little more expensive, is far cleaner and in every way preferable for this use.—V. A. Mattison.

ANCIENT HISTORY

Mason City, Ia.—Editor Motor Age—Can you tell me through the Readers' Clearing House about how many motor cars there were in the United States in 1893? This is more to settle an argument than anything else.—E. E. Beatty.

Motor Age has no means of ascertaining the number of cars in existence in 1893—but there were very few. Duryea, Haynes and a few others were then experimenting. Duryea's first public appearance was not until about 1894, Haynes' first car was not produced until 1893-94 and Winton had nothing but experimental cars out until the year 1897.

CALCIUM CARBIDE LAMP

Cambridge, O.—Editor Motor Age—There is a calcium carbide miners' lamp manufactured somewhere—if possible please furnish me with the name and address of the maker? It is a small lamp which a coal miner carries on his hat while working in the mine.—J. S. Fritz.

Motor Age knows of no maker of such a lamp, but possibly some of its readers can answer Mr. Fritz's question.

AIR AND WATER COOLING

Mason, City, Ia.—Editor Motor Age—One of our customers asks the following question: "Why, when an air-cooled engine is most efficient at 350 degrees, does a water-cooled engine lose power when the water reaches the boiling point, which is 138 degrees lower?—Hathorn Auto Co.

Efficiency and power are not interchangeable terms. An engine is said to be most efficient when it produces a horsepower for the smallest consumption of fuel, although the horsepower it develops under such conditions may not be the maximum of which it is capable. A water-cooled engine is designed to work normally at a jacket temperature of about 200 degrees Fahrenheit. In consequence of the cylinders walls being cooler than those of an air-cooled engine, the incoming charges are not heated to the same extent, consequently a greater weight of mixture is taken in per stroke and the compression also can be carried to a somewhat higher point without preignition. If the temperature rises above that for which the engine was designed two things happen—the incoming charges are rarified by the greater heat and spontaneous ignition is liable to occur before the end of the compression stroke. Both of these things reduce the engine's power. If, however, preignition does not occur it is probable that the fuel consumed per horsepower per hour would be smaller than before, although the maximum horsepower would be less. In the air-cooled engine the compression is made lower purposely, to avoid preignition under ordinary circumstances, and, both for this reason and because the weight of charge taken in per stroke, is less for equal volumes, the power is less than that of the water-cooled engine of the same dimensions. On the other hand combustion is rapid, owing to the high temperature of the surrounding walls, and the amount of heat converted into work is greater in proportion to the fuel consumption than in the water-cooled engine. These facts explain both the smaller horsepower of the air-cooled engine and its high fuel economy as repeatedly shown in fuel consumption tests that have been made.

LONG VS. SHORT STROKE

Springfield, Ill.—Editor Motor Age—Kindly favor me with a reply to the following question: Assuming that the mean effective pressures are equal; that valve areas, lifts, etc., are worked out in a similar manner, and that in both cases the piston speed in feet per minute is the same, what would be the relative power of a six-cylinder four-cycle engine of 4½-inch bore and 4-inch stroke, as compared with a similar engine of 4-½inch bore and 5½-inch stroke?—X. Y. Z.

If the piston speed, mean effective pressure, number of cylinders and cylinder bore are the same, the nominal power output of any two motors will be the same, regardless of the length of stroke. With any four-cycle engine the piston has the mean effective pressure behind it during one-fourth of its travel, and, so long as this travel is the same, it cannot matter how many revolutions are required to produce it. For example, with a piston speed of 1,000 feet a minute, a piston area of 15.9 square inches—that of a 4½-inch piston—and a mean effective pressure of 54 pounds—the German government rating—the power is $250 \times 15.9 \times 54 \div 33{,}000$, which equals very nearly 6½ horsepower per cylinder, or 39 horsepower for the six. Of course, at a given number of revolutions per minute, the power output of the larger engine will be the greater, but since piston speed and not revolutions per minute is the limiting factor, two engines can be considered as practically of the same power. The valve areas and lifts have no material bearing, since practically the only effects produced by changes in them will appear as a variation in the mean effective pressure. If anything, probably most up-to-date designers would give preference to the short-stroke motor, since with it the wall areas in contact with the charges are at their minimum, and the duration of contact between wall and charge is shorter. Besides, the shorter stroke will cut down the size and weight of the engine.

CAUSE OF A POUND

Marion, S. D.—Editor Motor Age—Please advise me through the columns of the Readers' Clearing House if a pound in the cylinders can be caused by the exhaust valves being out of time. I had the crankshaft of my motor out and went to put it back again, when I found there were no marks on the gears to indicate the correct position for timing. I timed it as nearly as I could with the aid of a good book on motor cars, the exhaust valve closing at the end of the stroke. I also put on a new timer. Is it possible the cause of the pounding comes from this—if it is not in the right position? The pound is very bad and can be felt all over the car when going at any speed. It is a two-cylinder opposed motor.—Jacob Hieb.

Either might cause the pound, although it is more than likely the ignition is too far advanced. It is common practice to close exhaust valves on the dead center, although some makers close them a few degrees late. Mr. Hieb should write the maker—whom he does not state—for instructions as to the valve timing, as it is probable the maker knows exactly where the valves should be set to give best results. The very fact that the motor pounds on high speed would seem to indicate that the firing point is too far advanced, inasmuch as the trouble seems to be aggravated when the car is on high speed work and when the spark would naturally be advanced. Not knowing the make, Motor Age cannot give the valve setting and timing, so it would be well to write the maker, giving year of manufacture or number of the motor.

MOTOR BUGGY MAKERS

Amana, Ia.—Editor Motor Age—Please give the names and location of manufacturers of motor buggies equipped with air-cooled motors and friction transmission. What are the advantages and disadvantages of friction transmission compared with other kinds.—Reader.

West Liberty, Ia.—Editor Motor Age—Can you tell me the name of any company making a motor buggy with 32 to 38-inch wheels, with solid rubber or steel tires and having a two-cylinder 12 to 20-horsepower motor placed crosswise of the frame, with planetary transmission, shaft-drive, individual seats and fitted with a torpedo deck?—Clark Kester.

The following list gives the names of the

makers of motor buggies, with addresses and names of cars; those marked with an asterisk have water-cooled motors, whereas the others have air-cooled motors: W. H. Kiblinger Co., Auburn, Ind., Kiblinger; Hatfield Motor Vehicle Co., Miamisburg, O., Hatfield; Holsman Automobile Co., Chicago, Holsman; Schacht Mfg. Co., Cincinnati, O., *Schacht; Reliable Dayton Motor Car Co., Chicago, *Reliable Dayton; Success Auto Buggy Mfg. Co., St. Louis, Mo., Success; Monarch Machine Co., Des Moines, Ia., *Monarch; Connecticut Automobile Works, New Haven, Conn., Fulton; Economy Motor Buggy Co., Fort Wayne, Ind., Economy; Postal Auto and Engine Co., Bedford, Ind., Postal; Mier Carriage and Buggy Co., Ligonier, Ind., *Mier; Victor Automobile Mfg. Co., St. Louis, Mo., Victor; Albany Automobile Co., Albany, Ind., Albany; D. W. Haydock Auto Mfg. Co., St. Louis, Mo., Cosmopolitan; Single Center Buggy Co., Evansville, Ind., Single Center; Bugmobile Co. of America, Chicago, Bugmobile; Chicago Coach and Carriage Co., Chicago, Duer; Reeves Pulley Co., Columbus, Ind., Gobuggy; Staver Carriage Co., Chicago, *Staver; International Harvester Co., Chicago, International; J. B. Lindsley & Co., Chicago, Lindsley; Neustadt Automobile and Supply Co., St. Louis, Mo., Neustadt; Everybody's Motor Car Co., St. Louis, Mo., Everybody's; A. B. C. Motor Car Co., St. Louis, Mo., A. B. C.; Union Carriage Co., St. Louis, Mo., Union; D. D. Snyder & Co., Danville, Ill., Snyder.

REMOVING NEVERLEAK

Logansport, Ind.—Editor Motor Age—I beg to reply to the inquirer from Burns, Kan., through the Readers' Clearing House. To clean Neverleak from a tire, slit the tire at the valve for insertion of an inner tube. Open the slit as wide as possible and place a stick in the slot; then place the nozzle of a hose in one side and let water run until it is cleaned. If the water pressure is not available, go to some boiler and use steam or hot water. Do not use too long at one application, let the tire dry thoroughly and use soapstone when inserting the tube. I have tried this cleaning successfully on a 28 by 2½-inch tire. I placed the tire on the rear wheel of a 1,000-pound machine but one end of the inner tube would blow out after a short run. I then folded the end back on itself, but in a short time it would blow out again. I should like to hear the experiences of others on inner tube insertion.—F. D. Bowyer.

Whittier, Cal.—Editor Motor Age—In the issue of Motor Age of January 2 is an article asking the question whether or not an inner tube can be drawn into a single-tube tire that has Neverleak in it. I have been a reader of Motor Age for some time and have found some very helpful things in it, and for the benefit of my fellow-readers will say that a single-tube tire that has had Neverleak put in it can be split between two lugs, generally where the old valve is. Then take it to a hydrant and put the hose in it about 3 minutes from each way; then take hot water and wash it inside until the water shows no color. Set the tire down to drain, leaving the split down so the water can be emptied. After it is dry use plenty of soapstone prepared especially for the purpose; shake the tire and turn it so as to get a coating on the entire surface, when the tube will pull in readily. I have fixed a good many tires in this way, as I have been in the repair business for a long time.—C. W. Baldwin.

Durand, Ill.—Editor Motor Age—In answer to Subscriber, of Burns, Kan., I give my remedy. I cut the tire open at the valve stem where I put in the inner tube; then I use warm water until the Neverleak is all washed out, and so it does not color the water, which takes only a few minutes. Then I put a wedge in tire where it is cut open so as to dry it out inside. The tire must be hung up with this side down so the water left in will evaporate. When the tire is dry I put in soapstone and pull in tube, the same as I would with a bicycle tire.—A. Gunderson.

Parsons, Kan.—In Motor Age of January 2 was published an inquiry in the Readers' Clearing House in regard to the removing of Neverleak from single-tube tires. I wish to say it can be done by the addition of a weak solution of lye and water through the valve stem. This entirely cleans it and does not eat the rubber. Please let me know through the Readers' Clearing House if the book, Homan's Self-Propelled Vehicles, is revised annually. Also which is considered the best, the chain drive motor cycle or the belt drive.—W. W. Kimball.

Homan's book is revised, but Motor Age does not know if it is revised annually. Good authorities seem about equally divided on the question of belt or chain drive, but if there is a difference it is in favor of the belt.

WHO CAN ANSWER THIS?

Port Alleghany, Pa.—Editor Motor Age—I have on my car a French mackintosh top of light color, which has become somewhat faded, so I wish to color it to some dark shade. Please advise me through "The Readers' Clearing House" what I can use that will not have any bad effect on the mackintosh material.—Reader.

Motor Age is compelled to admit that the question is a poser; indeed, it does not know that anyone can give help with a satisfactory answer to the question, especially inasmuch as the writer does not give exact details concerning the top material. It may be presumed, however, that it is of fabric, waterproofed either by impregnation or by coating with some preparation. If the first, it is certain that any attempt to dye the fabric would act injuriously upon the waterproofing, since there are no dyes made which could be depended upon for permanency that do not require boiling or some similarly strenuous means for fixing them so that they will stand the weather. If there is an applied coating this might be repaired by varnishing with a good linseed oil varnish, though to dry this properly will take some time. If any reader can give further information Motor Age will be pleased to give space to his communication.

ILLINOIS LICENSES

Waterloo, Ia.—Editor Motor Age—Please tell me through the Readers' Clearing House if I need an Illinois number for my car if I go to Chicago and stay a couple of weeks.—W. I. Hillman.

If a car from another state enters Illinois it is amenable to the general provision of the Illinois law, but does not have to have an Illinois license number, provided it has its own state license number attached.

SOME MOTOR SPECIFICATIONS

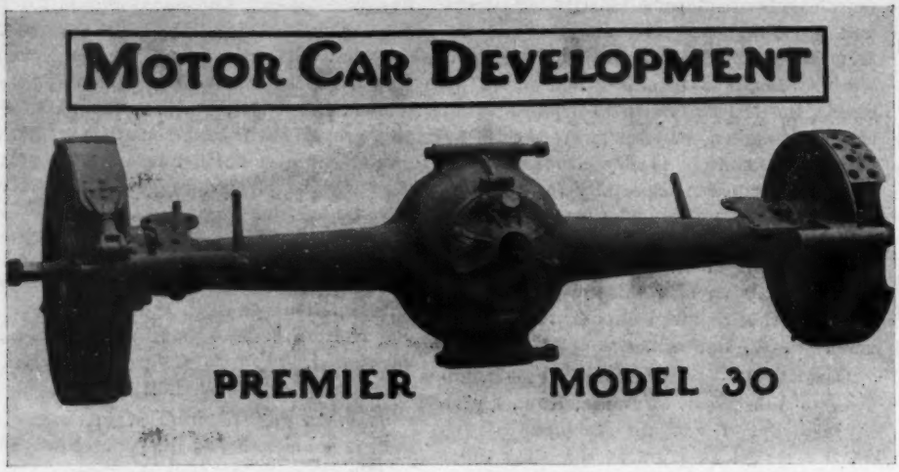
Demopolis, Ala.—Editor Motor Age—Please examine and tell me what you think of the following specifications of a four-cylinder motor, and what horsepower you would call the engine: Bore, 4¼ inches; stroke, 4½ inches; piston pin bearing, 1 inch by 2⅞ inches; crankpin bearing, 1⅝ inches by 2⅜ inches; front crankshaft bearing, 1⅝ inches by 2¾ inches; middle crankshaft bearing, 1⅝ inches by 3 inches; rear crankshaft bearing, 1⅝ inches by 4 inches; camshaft diameter, ⅞ inch; length of connecting rod, 9½ inches; crankshaft extension, rear, 1¼ inches by 5¾ inches; crankshaft extension, front, 1¼ inch by 1⅞ inch; flywheel diameter, 17½ inches; flywheel face, 3½ inches; drop from supporting arms to center of crankshaft, 3 inches; width across supporting arms, 17¾ inches; length of piston, 5 inches; number of piston rings, four; width of piston rings, ¼ inch; offset of cylinder, ⅞ inch. All gears are steel, twelve pitch. I will be governed by your figures.—A. M. Sledge.

As nearly as can be judged from a mere list of specifications, unaccompanied by drawings, the engine seems to be excellently designed, in that it conforms closely to the best established practice. Without knowledge of the valve lifts and sizes, however, nor of the normal rotational speed, it is impossible to predict, even approximately, the power it will develop. At a guess, and if the valves are of ample size, a little over 30 horsepower at 1,000 revolutions may reasonably be expected.

OFFICERS OF THE N. R. A. D. A.

Terre Haute, Ind.—Editor Motor Age—Please give the address of the secretary of the National Retail Automobile Dealers' Association, which was organized at the last Chicago motor car show?—John S. Cox.

C. F. Jensen, of the Steinhart-Jensen Automobile Co., Joliet, Ill., is president and J. A. Crum, of the Kruger Automobile Co., of Oshkosh, Wis., is secretary.



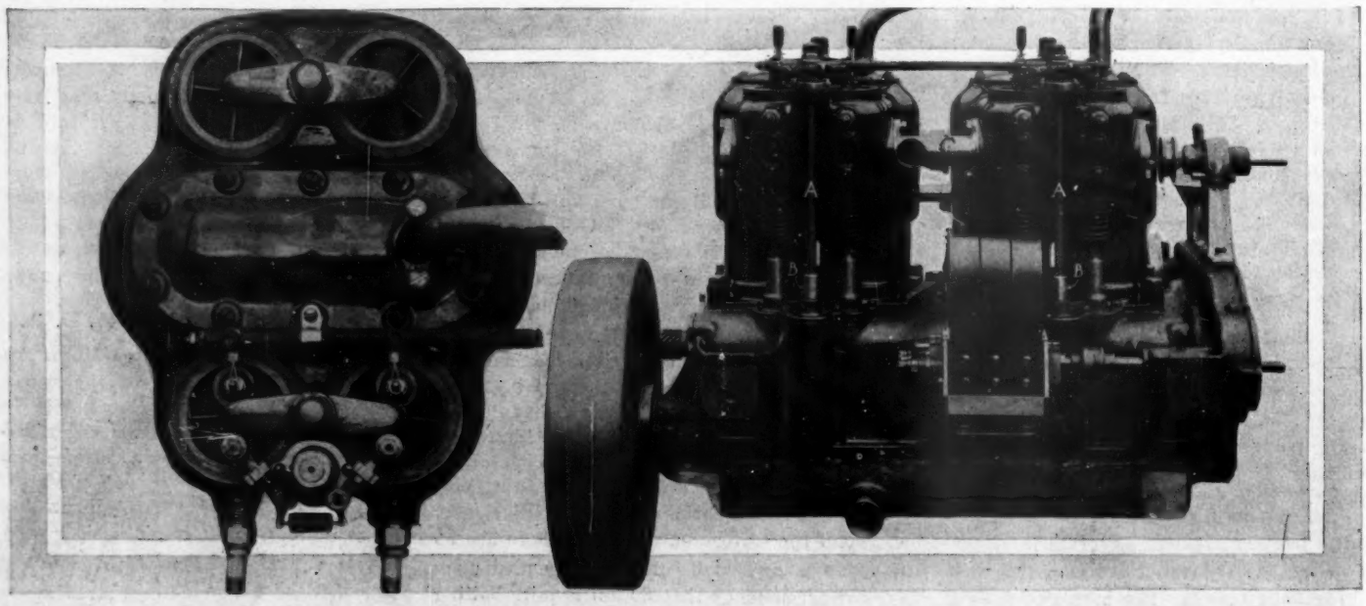
PREMIER REAR AXLE WITH UNIQUE DIFFERENTIAL HOUSING

THERE are three Premiers for 1908—model 24, the continued style built in 1907 with a 24-horsepower engine having 4¼ by 4½-inch cylinders, and two brand new ones, models 30 and 45, respectively, four and six-cylinder chassis. This description applies to model 30 only, the four-cylinder machine. Model 30 is brimful, almost overflowing, with new devices and changes—none of them at all radical, but all along the road of standard constructions. First of all comes the use of low-tension make-and-break ignition for the main ignition outfit and supplemented with a jump spark system with storage cell and distributor for reserve; second is the new style of motor with opposite valves and cylinders 4½ inches square; third comes magneto ignition for the low-tension outfit, the use of spiral gears for driving the make-and-break parts, the distributor and the water and the oiler; fourth the employment of a disk clutch containing fifty-seven alternate steel and bronze disks; fifth a crankcase with the top part made of cast iron and the bottom portion of pressed steel; sixth, new styles of universal joints at each end of the propeller shaft, as well as an entirely new floating ball-bearing rear axle, with internal and external brakes; seventh, semi-elliptic front springs, yet retaining full-elliptics in the rear; and many other improvements, such as eccentrically-adjusted fan-drive, new style of honeycomb radiator, novel intake pipe, hollow integral motor supporting arms, new front axle with Le Moine type of steering knuckles and other improvements made imperative because of the general employment of new design throughout. Thirty-four-inch wheels are used and the wheelbase measures 108 inches. The model 45 six-cylinder car is fashioned along lines identical with those used in the model 30.

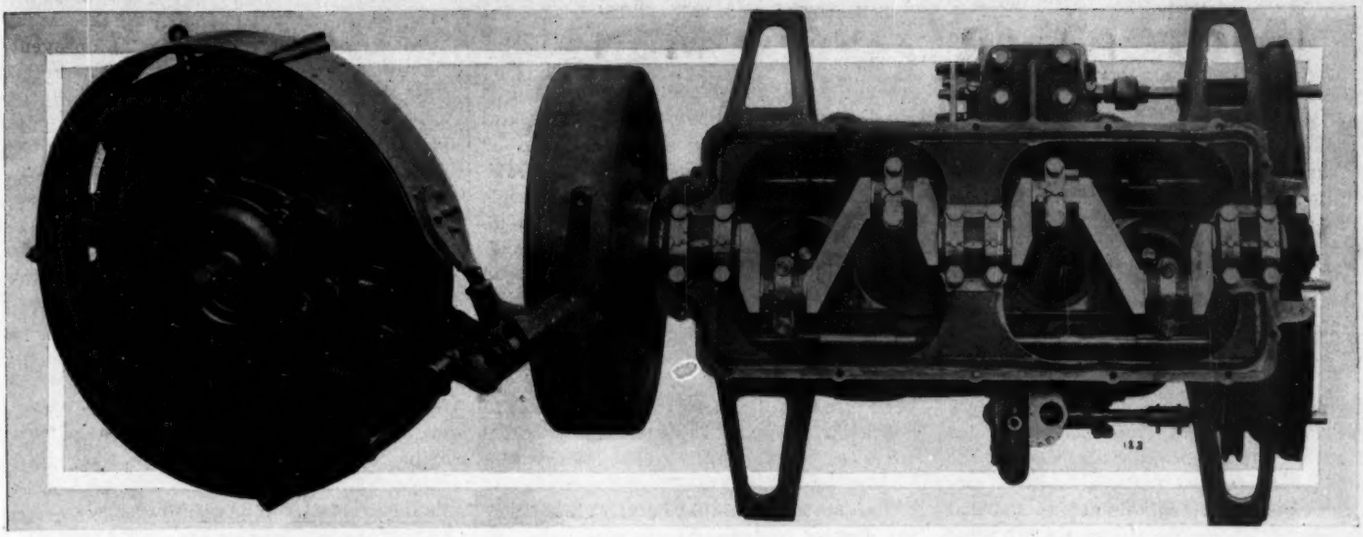
In model 30 the cylinders are cast in pairs. Intake and exhaust valves are interchangeable, and all are of nickel steel with stems ground to size and sliding in bushings in the cylinders which can be renewed in case of wear. Instead of the usual double or triple Y intake pipes, the cylinders are provided with a longitudinal intake port underneath the intake valves, and the gases are introduced into these ports through flanged T fittings, between the pairs of cylinders, making the intake connection short and direct, the effect being the equivalent of heating the intake pipe by cylinder waterjacket and preventing recondensation of gases at low speed. The T connection between the pairs of cylinders is provided with slip joint stuffing box, which provides for expansion and contraction between cylinders. The top and bottom water manifolds are provided with long risers and the cover plates on the top and sides of cylinders, made of aluminum, are fastened to the waterjackets only by small-size machine screws and will give way in case of freeze-up, preventing a cracked cylinder waterjacket.

The crankshaft, drop forged from a bar of special steel, rough turned and heat-treated, is finished by grinding to size. The bearings are lined with Parsons white brass bushings. The bolts for holding on the bearing caps, as well as all other internal bolts, are provided with removable lock plates. The pistons after being roughed out are annealed and set aside to allow the iron to take its permanent set. Each piston is ground to size, tapered slightly at the upper end to allow for expansion, and is provided with four piston rings, these rings being turned eccentric and then out at an angle of 45 degrees compressed and ground to circular form after splitting. The two rings constituting each pair are pinned together so as to break joints, and permitted to float in their respective grooves.

The connecting rods are I-section drop forgings with heads machined and the crankshaft end of rod fitted with a bushing of Parsons white brass held in place by two cap screws, the cap screws in turn being held by removable lock plates. The piston pin consists of a large-diameter hollow hardened and ground steel pin, clamped rigid in the upper end of connecting rod. The pin, in addition to being clamped in the connecting rod, is insured against working endwise and scouring a cylinder by a groove cut in its side through which



TOP VIEW OF PREMIER CYLINDER PAIR AND INTAKE SIDE OF MOTOR WITH MAGNETO IN POSITION



PREMIER DOUBLE BRAKES ON REAR WHEELS AND UNDERNEATH VIEW OF MOTOR PARTS

the connecting rod clamp bolt passes, thus securely keying the pin in its place.

The Premier has adopted for regular use low-tension make-and-break ignition, using a Simms-Bosch magneto for the source of current supply. On the intake valve camshaft are located long-faced spiral gears arranged to drive the vertical shafts A, on which are located the cams operating the make-and-break hammers. The vertical make-and-break shafts are made in two pieces—the lower end carrying the spiral gear is journaled in the crankcase—the other end carrying the cams being journaled in a Hess-Bright bearing located on the cylinder directly under the cams. The halves of shaft are joined by a three-jaw clutch coupling B, which is marked so should necessity arise for removing a cylinder the shaft merely separates at the coupling and in replacing it all that is necessary is to see that the marks on the coupling come together to insure the correct timing. To obviate wearing of the igniters the Premier company fastens a face of irridium platinum to both the stationary and moving electrodes. The contacts are permanently fastened to their respective igniter parts by brazing the same with pure copper. One of the points in this make-and-break ignition system is the method of cushioning the contact on which a patent has been applied for. This feature automatically takes care of the wear of the igniter points, cams and cam contacts, as well as providing a hammer break giving a large-size spark at low speed of the motor. The electrical connection between the individual igniters and magneto is through a ¼-inch brass rod enclosed in a fiber tube. The connections to the individual igniters are made by fiber-handled jack-knife switches, the latter providing facilities for testing out each separate igniter. The igniter points are located directly over the inner edge of the intake valve. The incoming charge of gas must at all times pass this point. The second or auxiliary system of ignition consists of a high-tension secondary distributor and single coil using storage battery. Both high and low-tension sparking systems are advanced at the same ratio by the spark lever on the steering wheel, and they can each be independently adjusted. Both low-tension igniters and high-tension secondary distributor being driven through the same type and angle of spiral gears, it is not necessary to rotate the distributor for advancing the spark. The Bosch magneto is driven through a three-jaw coupling by fiber gear enclosed within the crankcase. The force feed lubricator is located on the exhaust side of the motor under the hood, and is driven from the exhaust camshaft through spiral gears. On account of its close proximity to the exhaust pipe, the oil is kept at an even temperature. The oil is fed into the cylinders just below the second ring from the top when the piston is down, the location being high enough in the cylinder to insure a lubrication of the cylinder walls and also the piston pin. One tube of the oiler leads to the forward end of the crankcase containing the camshaft, magneto and pump driving gears. The lubrication within the crankcase is by splash.

The honeycomb radiator is fastened to the forward end of the frame by two reinforced bronze brackets, and mounted on a rubber cushion. The top of the radiator is not fastened in any way. One of the most notable changes consists of the large-size expansion tank on top of the radiator, this making it possible for every part of the radiator to do its share of the work, and doing away with waste of water through the overflow when the motor is raced suddenly. The water is circulated by a centrifugal pump, gear-driven by a fiber gear enclosed within the crankcase. The water connections between the pump and the various cylinders as well as the connection from the top of cylinders to the radiator, are now made of autogeneously-welded tapered copper tubes with smooth interior, and proportioned to give an equal flow both to and from each pair of cylinders. The water circulating system is so designed that in case of stoppage of the pump the water would circulate by thermo-syphon principle.

The clutch is enclosed within the flywheel and is made dustproof and oil-retaining. It is of the Weston multiple-disk type. The connection between the clutch and transmission is through a hardened floating shaft squared within the forward end of the clutch spider, and engaging the transmission at its other end through a three-jaw clutch coupling with its jaws

PREMIER MODEL 30 TOURING CAR FOR FIVE PASSENGERS

made slightly spherical, acting as a universal connection between motor and transmission. The transmission is through a three-speed-and-reverse selective type gear shift. The control is through an H-segment, one lever for all speeds. The gearshafts are hardened and ground, mounted on Hess-Bright bearings, and the gears as well as the shifting mechanism are enclosed in an oil-tight case. The drive between the transmission and rear system is through two universal joints of Premier design. This joint is a combination universal and slip joint at both ends, doing away with the usual small-diameter squares for taking care of the longitudinal slip. The hardened steel bodies of the universal joints, one at either end of the propeller shaft, are fastened respectively to the transmission spindle at one end and the rear axle driving pinion shaft at the other end, through hardened tapered squares, and are retained by castellated nuts. The main driving pinion in the rear axle is integral with the spindle, hardened and ground, and the pinion is mounted between Hess-Bright bearings.

The rear axle housing instead of the conventional built-up construction, is made of two bell-shaped crucible steel castings, heavily ribbed on the inside to secure rigidity in every direction, and doing away with truss rods. The differential is mounted within the rear axle shell in adjustable ball bearings on its hub extensions and the connection to the driving spindles is made through hardened squares. The rear wheels are clutch-driven, and the load is carried on Hess-Bright bearings. All parts constituting the right and left halves of the rear axle system, as well as the brake system, are interchangeable. The wheels are driven through three-jaw clutches on the inside end of hub, and the corresponding jaws on the driving spindle are forged integral with the spindle. The rear spring seats are made to rotate on the axle shell and the axle shell is kept from rotating by the triangular double torsion rod which has been used in Premier construction for 5 years. The spring shackles are provided with compression grease cups, lubricating the spring heads through hollow bolts.

Two systems of brakes are used, both being applied to drums on the rear hubs, the drums being 14⅞ inches in diameter and 3 inches wide, and made integral with the rear hub. The foot brake consists of an internal expanding bronze ring, each ring being provided with forty-four 1⅛-inch cork inserts compressed in ¾-inch holes. The expanding links used in this internal brake are designed at all times to carry the brake ring central and prevent drag. The emergency brake, side lever operated and inter-connected with the clutch, consists of a pair of external contracting bands, camel's hair lined. Provision is made for external adjustment on both. Both brakes are equalized through pressed steel brake beams sliding in reinforced slots in the side of frame members.

The pressed steel frame consists of pressed steel channel sections with 2-inch wide top and bottom flanges. The side members are tied together with four cross girts—one in front of the motor carrying the radiator, one in the rear of transmission, one immediately above the rear axle, and one at the extreme rear end of the frame. All cross members are provided with gussets, and are hot riveted to side members. The side members are offset at the dash and are reinforced by an angle subframe riveted to the top flange of the main frame, and extending from the extreme forward end of the frame, back past the offset, and riveted to the cross-girt in rear of transmission. The lower edge of subframe members is turned inward and provides a means for fastening thereto a pressed steel sod pan extending from the radiator support to the cross-girt back of transmission. The front axle is an I-beam section dropforging made of one billet of steel without a weld. The steering knuckles are made of Vanadium steel. The knuckle is mounted in the axle end in a hard bronze bushing, and the weight is carried on a row of balls. Front wheels are carried on Hess-Bright bearings. The spring seats are integral with the axle.

MOTOR CAR LITERATURE

The Success Auto Buggy Mfg. Co., in its catalog on the Success runabout, shows an interesting illustration of one of the pioneer commercial cars used in the country, built by John C. Higdon, a member of the company.

The J. A. D. Ketchum garage, Saratoga Springs, N. Y., has a book containing maps and road guides of the surrounding district, including routes to Caldwell, the Lake George region, Stillwater, Troy, Schenectady and other connecting points.

The Jencick Motor Mfg. Co., in a large-sized very plainly arranged catalog, illustrates and gives specifications on its four-cylinder 80-horsepower motor, its six-cylinder 60-horsepower type, its four-cylinder 40-horsepower style, its six-cylinder 30 and its four-cylinder 20, and in the remainder of the book are given the details as well as extra illustrations of the parts.

"The Blacksmith's Guide," by J. F. Sallows, published by the Technical Press, Brattleboro, Vt., is a book well filled with practical information arranged under such heads as machine forgings, tool forgings, hardening and tempering, high-speed steel, case hardening and coloring, brazing and general blacksmithing. The editor has had 27 years' experience in the work and the book is largely an outcome of his experience at the forge.

The Matheson "Advance Sheets" contain a line of commendable pen-and-ink reproductions indicative of the changes made in the car over the 1907 model. The idea is novel and decidedly interesting. Many makers could copy it to advantage.

Under the title "A Woman's Experience in the 1907 Glidden Tour" as written by herself, Mrs. M. Cuneo tells of her drive during the 1,500 miles of the run, which story takes the form of a letter written to the Rainier company. On the rear cover is a reproduction of the cup presented to Mrs. Cuneo by her Glidden admirers.

No. 7 of the Reo Echo shows on the front cover a Reo car containing President Roosevelt, Secretary Loeb, R. E. Olds and J. L. Snyder, the last named president of the Michigan Agricultural college. The picture was taken on the recent visit of President Roosevelt to Lansing. The booklet also contains the story of Rea cars in the Glidden tour.

The most interesting illustration in the catalogue, "Carpenter's Automobile Steels," is found on page eight, and which shows the result of the impact occasioned by a 6-inch crucible alloy projectile striking against an 8-inch hardened armor plate. The projectile pierced the plate and was removed intact. The book is for buyers and contains tables of strength and specimens of tests.

The Locomobile company is circulating a color cord showing samples of colors used in finishing the car bodies and running gears. In all samples of twelve colors are shown.

Manufacturers anticipating the erection of factory additions and being undecided as to the relative merits of brick or concrete construction and ignorant of the merits of the reinforced concrete work should secure a copy of bulletin No. 14 from the University of Illinois, which contains reports of tests made on reinforced concrete beams together with figures showing stress and strength.

"Hendrick's Commercial Register of the United States" contains lists of manufacturers of all motor cars, car parts and every portion of a motor car. The information is arranged alphabetically under the different heads. The book is a most valuable guide for those interested in motoring and besides which field it covers every other department of industry and commerce. It is a large size cloth-bound volume with 1,224 pages.

The 1908 Italian chauffeurs' guide, published in Italian by Ulrigo Hoepli, Milan, Italy, contains much mechanical information that the chauffeur should understand and in addition serves as a good guide to the progress of the year just closed, containing as it does illustrations and information on all car parts.

MOTOR CAR SHOP KINKS

REMOVING CARBON

An annoyance with which almost every motorist has to contend more or less is the deposit of a hard, indurated form of carbon, similar to gas carbon, upon the walls of the cylinders and valve chambers. This carbon is a product of heat decomposition of the fuel or the lubricant, or both, under pressure, and in the presence of too little air for combustion. Its formation can be avoided almost altogether by close attention to the lubrication, valve and ignition timing, and carbureter adjustments. Too rich a mixture almost invariably results in carbonization, which also follows upon the use of oils that do not stand high enough temperatures, or that are otherwise of poor quality. Likewise, delayed opening of either exhaust or inlet valves, in the one case not providing free exit for the exhaust and in the other cutting down the time for combustion, will tend to produce carbonization. Unduly late ignition produces an effect similar to that of delayed inlet-valve opening, by reducing the time for combustion. It is not possible, however, to avoid carbonization altogether, and even in the best cars, perfectly adjusted, the deposit will slowly accumulate. To keep it to a minimum, the often recommended process of coal-oiling the cylinders from time to time is to be advised, but even with this preventative regularly applied it occasionally becomes necessary to take off the cylinders, scrape out the combination chambers and clean off the valves and pistons. Otherwise, sooner or later, according to the quality of the engine and the perfection of its adjustments, serious trouble will be caused by the accumulation. For one thing, as soon as it is present in points or lumps, these will tend to become red hot and thus occasion preignition. Small particles, too, may catch on the valve seats, holding the valves open and causing loss of compression and power; or if the valve heads are of the cast iron type, their breakage by the forced uneven seating. The carbon that catches in the piston rings and their grooves may so bend the rings as to prevent their even contact with the cylinder walls, so essential to good compression, and in addition may badly score the cylinders. In scraping off these carbon deposits it is necessary to use hard, sharp-edged or pointed tools for scrapers, and to apply them vigorously and thoroughly to every part that presents the objectionable coating. For cleaning out the ring grooves it usually will be found desirable to expedite the work by grinding a special tool, made to fit so closely as to leave no deposit under its end or by its edges. Keeping the deposits moist with kerosene will facilitate their removal; soaking them with kerosene for hours or even days will be still better. For surfaces that can be reached in this manner, and that will not be injured by the wear it will cause, finishing may be done with coarse emery cloth, held in the hand or around a stick, if circumstances may require. It is to be understood that it is a rather long and tiresome job at best, to thoroughly clean all parts of a badly-carbonized engine, but the improvement in its power and running afterwards will more than compensate for all the work expended by the owner.

SECURING FOOT MATS

On many cars the corrugated foot mats used are secured to the floor or running boards, as the case may be, by the somewhat flimsy expedient of tacked-down strips of brass or aluminum at their edges, small escutcheon pins being used for the tacking. The objection to these is their tendency to loosen up and work out under prolonged vibration—a tendency almost sure to manifest itself in time, no matter how carefully the work has been done or how closely the tacks may be spaced. Because of these considerations, it is good advice to the motorist who is using a car that has foot mats secured by tacked-on strips, to urge that the tacks be replaced by small round-headed brass screws. By substituting these at the earliest convenience, and at a cost which is trivial, in both labor and money, it can be depended upon that loosening of the strips, and thus of the mats, will not occur. Another fault that sometimes is to be found with the affixing of mats is the lack of anything but tacks to hold down the material in a corner, as where it comes from a floor onto a vertical surface. In such a place, a holding-down strip similar to the ordinary stair rod is apt to be in every way an improvement over anything else.

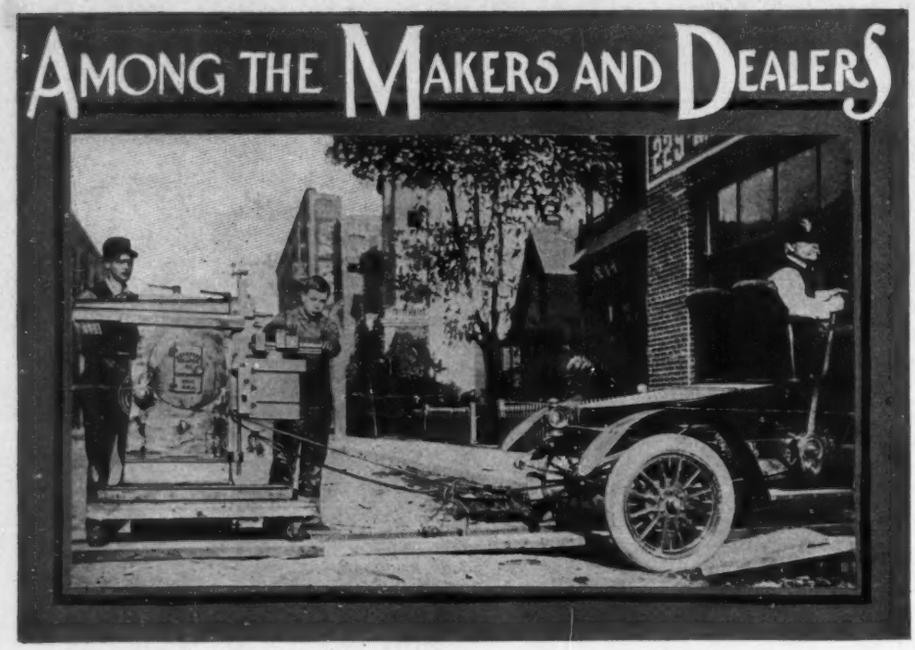
TAKING CAR APART

That there is great educational value to be derived from taking a car apart is a fact not so well realized as it might be by the average motorist. Indeed, in no other way is it possible, even for the expert, to operate a machine with as perfect confidence and assurance as when such operation has been preceded by the complete dissection of the car, or at least of one in every respect similar to it. No man, no matter what his mechanical knowledge or attainments, is capable of telling, simply from acquaintance with the exterior of a mechanism, just which of the many possible constructions is employed in its make-up, and without such knowledge it is totally impossible to run the mechanism intelligently without the possibility of doing it damage. Nor, unfortunately, does the average instruction book help matters much, these books rarely going into the details of construction to the extent that many consider it desirable that they should. It is not, of course, in any sense to be recommended that the average purchaser of a car, without knowledge or facilities for such work should undertake to dismember the machine for no better reason than that of the small boy with the watch, who "wanted to see the wheels go around." But taking apart and putting together a car in a properly equipped shop, under the supervision of an expert, if need be, is a very different matter, and, though it may dirty the hands and test the patience, will afford an experience that no motorist worthy the name will forego permanently. And, in this case, what is good for owner is good for chauffeur, so the least a wise employer can do, if unwilling to learn his car himself, is to provide its driver with every facility for becoming as perfectly familiar with its details as with its general construction. If distance and time permit, even a trip to the factory will not be misspent by any one.

USES FOR AIR HOSE

Air hose, of the type commonly used for tire pumps, is capable of a variety of services in an emergency, as was proved in a case that recently came to the writer's attention. A car was disabled through breakage of the gasoline line from tank to carbureter, long-continued vibration in conjunction with a poor support and poorer soldering having resulted in the shaking out of a stopcock—a break that not only occasioned considerable loss of gasoline before a plug could be inserted, but also left the separated pipe ends two inches apart. A repair was first extemporized with some extra acetylene tubing that happened to be at hand, with the result that the driver soon learned, what he might have known before, that gasoline is a pretty fair solvent of good rubber. It was then suggested that the rubber hose from the pump be used, on the theory that the stout fabric in it would hold it together. This proved to be the case—to the surprising extent of several days' use before a permanent repair was made. By this time the rubber lining, the bore of the hose, was practically washed out, but the closely-woven, heavy canvas next to it was as good as ever, and had prevented more than the slightest trace of gasoline from reaching the outer plies of rubber and fabric in the hose.

AMONG THE MAKERS AND DEALERS



EXAMPLE OF RAMBLER UTILITY AS SEEN IN LOS ANGELES, CAL.

Branch Discontinued—Morgan & Wright have discontinued their Cleveland branch and placed the agency in the hands of the Ohio Rubber Co.

Handling Gillett-Lehmanns—Leon Rubay, 1697 Broadway, New York, is acting as distributer for the Gillett-Lehmann gasoline economizer, for which G. Stokvis is the sole licensee for the United States.

Holsman Expanding—The Holsman Automobile Co., of Chicago, is making extensive improvements and alterations in its factory in the way of additional store space, tool vaults, tools, etc., looking towards a larger output than ever in 1908.

Will Make Electrics—The Cuyahoga Motor Car Co., which recently opened a fine garage on Euclid avenue, in Cleveland, will in addition to handling cars embark in the manufacture of electric vehicles. A number of orders have been booked, subject to the success of the first cars turned out. While plans for the cars are well under way it will be some little time before they will be on the market. The vehicles will be known as the Cuyahoga.

Slauson Perry's Aid—Howard Greene, who has opened an eastern office in New York for the sale of gasoline gauges made by the Edmund E. Hans Co., still continues his connection with the Technical Press Bureau as a special contributor on motor car and motor boat subjects. His place thus made vacant in the active conduct of the work of the bureau has been filled, however, by Harold Whiting Slauson, who has become associated with Harry W. Perry in the office of the bureau at 25 West Forty-second street, New York. Mr. Slauson is a graduate of Cornell university, where he completed the course in gas engine work under Professor R. C. Carpenter, and has supplemented this with a practical working knowledge gained during a 3 months' term in the repair shop of the Wyckoff, Church & Partridge garage in New York. The bureau now has a regular working force of eight special writers on its staff.

Moves Office—The Indestructible Steel Wheel Co. has moved its Chicago offices from 1303 Michigan avenue to the Auto and Parts building, 1221 Michigan.

New Garage in Pottstown—The new fireproof garage and machine shop of the Pottstown Motor Car Co., corner Apple and Washington streets, Pottstown, Pa., will be completed for occupancy on about February 15.

W. B. Miller as a Prophet—A busy year for accessory branches of the motor industry is predicted by W. B. Miller, sales manager and secretary of the Diamond Rubber Co. The basis of this statement is a careful analysis of reports from all sections which indicates that the amount of renewal business to be done will be larger than ever before. "The number of motor cars in use the past year will not be reduced," figures Mr. Miller. "If some owners do not see fit to use their machines, the cars will pass to those who will. The number of new cars to be provided for, while not equal to that of 1907, will still reach, in the aggregate, a very large figure, making in the grand total a great extent of equipment of all kinds necessary. It is to be expected that business will be done along more conservative lines in all branches of the trade. The accepted forms of regular merchandising will prevail to a greater extent than formerly and high quality, particularly in tires, will be demanded because of the true economy of using such products. The far-seeing dealer and consumer are both on the quality platform, and both alike working for the greatest economy in upkeep cost. That they should do so is highly desirable. The 1908 season will undoubtedly see greater discrimination in buying exercised by all owners, and the general effect cannot but be healthful and beneficial to the industry as a whole."

Is a Chalfont Agent—F. W. Sandruck, 913 and 915 North Howard street, Baltimore, Md., has taken with his already established carriage business the agency for the Chalfont.

Grand Rapids' Addition—The Michigan Automobile Exchange has commenced business at Grand Rapids, Mich., dealing in new and second-hand motor cars. E. L. Wenzel will be manager of the exchange.

Off to Mexico—L. E. Hoffman, of Philadelphia, has gone to the city of Mexico in the interests of the H. H. Franklin Mfg. Co. He will canvas Mexico and also penetrate Central America as far as Yucatan.

Wardle Connects—Charles A. Wardle, who recently resigned as manager of the A. L. A. M. agency departemnt, will shortly announce a new trade connection. Mr. Wardle was formerly associated with the Locomobile Co. of America and the Ford Motor Co.

Mora Opens Gotham Branch—The Mora Motor Car Co., of Rochester, N. Y., has opened a New York branch with William W. Burke, formerly of the Electric Vehicle Co. branch and president of the Motor Parts Co., as manager. A salesroom is being fitted up at the southeast corner of Broadway and Fifty-second street.

Bowles Out of Concern—Notice is given that the partnership between Herbert B. Bowles, James M. Smith and Clarence L. Altemus, trading as C. L. Altemus & Co., has been dissolved so far as it relates to Herbert B. Bowles. The business will be continued at Fourth and Locust streets, Philadelphia, by James M. Smith and Clarence L. Altemus, under the firm name of C. L. Altemus & Co.

Bid Risley Farewell—Hartford tradesmen last Saturday bade farewell to George E. Risley, who has resigned as New England traveling representative of the Electric Vehicle Co. to become assistant secretary of agencies of the Connecticut General Life Insurance Co., of Hartford, Conn. The farewell took the shape of a supper given in Postmaster Frank Bucklaw's shack on Talcott mountain, to which the tradesmen drove in motor cars, passing the evening discussing a moose dinner and toasting Risley.

New Glidden Plant Done—After having been in the course of construction for a year and a half, the new factory of the Glidden Varnish Co. at Cleveland, O., is entirely completed and is in full operation. The old factory, which has been the home of this company since it was organized in 1874 as Glidden, Brackett & Co., is idle for the first time in its history. This new plant, which has cost over a half-million dollars, and occupies 17 acres and is built entirely of brick, concrete and steel, is said to be the largest exclusive varnish

factory in the world, both in capacity for making and for storing varnish. It also has a very large and complete grinding department, where Jap-A-Lac is made.

Reo Agency Changes—The Reo agency in Washington, D. C., has been transferred from Charles E. Miller & Brother to Lester D. Moore, 817 Fourteenth street, N. W.

New Ignition Company—The Buffalo Ignition Co., which will manufacture and sell motor car supplies, has filed a certificate of incorporation in the county clerk's office, Buffalo. The capital stock is $5,000. The directors are John H. Burns, James A. Munhall and John W. Churchill.

Kent Selling Stearns Cars—Morgan B. Kent, who recently represented the Hotchkiss in Boston, has been secured by Wyckoff, Church & Partridge, eastern selling agents of the Stearns, as their Massachusetts agent. Stearns agencies also have recently been placed in Rochester, Philadelphia and Baltimore.

Cleveland Branch for Elmore—The Elmore will be represented in Cleveland this year by a branch store. A sales room on Euclid avenue in the row just east of East Fourteenth street has been acquired with J. S. Bathwell and J. A. Carter in charge. These are the quarters recently vacated by the G & J Tire Co.

Factory Will Handle It—The F. B. Stearns Co., of Cleveland, will handle its Cleveland local business from its factory this year instead of through the Metropolitan Motor Car Co., which had the Stearns last year. The Metropolitan company, which has one of the largest garages in the country, will feature the Pierce Arrow.

Henshaw Returns to Haynes—C. S. Henshaw, formerly representing the Haynes in Boston, but who recently retired from the agency, has again become affiliated with the Haynes plant, this time as special representative for New England and the eastern states. He will go through the states in the interest of the concern and place orders and agencies. The Boston branch still is closed, but negotiations for it are now pending.

Apperson's Views—"In previous years both the majority of the dealers and of the buying public have waited for the national shows to be held in January, February and March before placing their orders. This year the earlier show dates removed that excuse for delay," says Elmer Apperson. "Although the recent money flurry undoubtedly affected the total volume of business done, I believe that up to this date as many good cars have been sold as were sold in any previous year up to the same date. We have received more bona fide orders, with cash deposits thereon, than in any other year at the same time. While I believe it is well for all makers to pursue a conservative policy until after the presidential election, when business can settle itself for the long pull, I also believe the public will be ready to take as fast as completed all of the really high-grade motor cars, of proven quality, made by manufacturers with established reputations for reliability."

Handling the G & J—The Enterprise Rubber Co. has taken the agency for the G & J tire in Boston and will handle its goods hereafter. D. B. Price and R. J. Barker, who have been with the company as Boston representatives for some years, will join the Enterprise company to look after the G & J end of the sales.

Rushmore Reports Victory—The Rushmore Dynamo Works advises Motor Age that the United States circuit court for the southern district of New York has sustained its charges and granted a sweeping injunction prohibiting several lamp manufacturers from manufacturing or selling imitation Rushmore lamps, shells, rear covers, front doors and ventilators and from using the name "flare front."

New Cleveland Enterprise—The Auto-Parts Co., of Cleveland, has been reorganized with W. D. Drown as general manager and backed by Will B. White and will open for business this week on Euclid avenue at the corner of East Eighteenth street. The company will have the Cleveland agency for the Michelin tires, Breeze carbureter and a general line of accessories. The same men are interested in the French-American Motor Co., maker of the F. A. M. car, the 1908 models of which will be handled by the Auto-Parts Co., of Cleveland.

Locates in Pittsfield—The Jacobson-Brandow Co., maker of ignition specialties, has located in Pittsfield, Mass., establishing its plant at 86 North street. Organizers of the concern are Edward B. Jacobson, formerly superintendent of the Pittsfield Spark Coil Co., and Dr. Frank W. Brandow. Among the new company's product is a spark plug and a coil. The plug has an insulating core of a lava composition, similar to the material from which the tips on gas fixtures are made. It has a double air space and is readily cleaned. The lava core is not easily broken. The Jacobson-Brandow plugs are made of brass instead of iron, and are of three different standards. The feature of the coil is a positive and rapid vibrator. The vibrator has only one adjustment, which is on the order of a micrometer adjustment, with indicator showing the position of the points, enabling the operator to locate and note the best point of contact. The points of contact or electrodes are stationary and the platinum points move laterally, producing uniform contact. The points can be removed for inspection or cleaning and replaced without disturbing the adjustment. The condenser of this coil is so constructed it can be removed readily for repairs. The coil is of the unit type of the self-interlocking system. It is entirely free from all wiring on top, all connections being made at the base of the coil box. Any unit can be taken from the box without disturbing the wires or the connections of the wires, as the units establish their own connections inside the box, it is asserted.

C. E. Wheeler Out—C. E. Wheeler, who was replaced as manager of the Boston branch of the Franklin by H. G. Kilbourne, has resigned altogether from the company. He is now considering several offers to go with Boston concerns.

Change of Address—The Hartford Rubber Works Co. calls attention to the change of address of its coast representative, the Chancellor & Lyon Motor Supply Co., which now is at 930 South Main street, Los Angeles. In San Francisco the Hartford product will be found at 542 Golden Gate avenue.

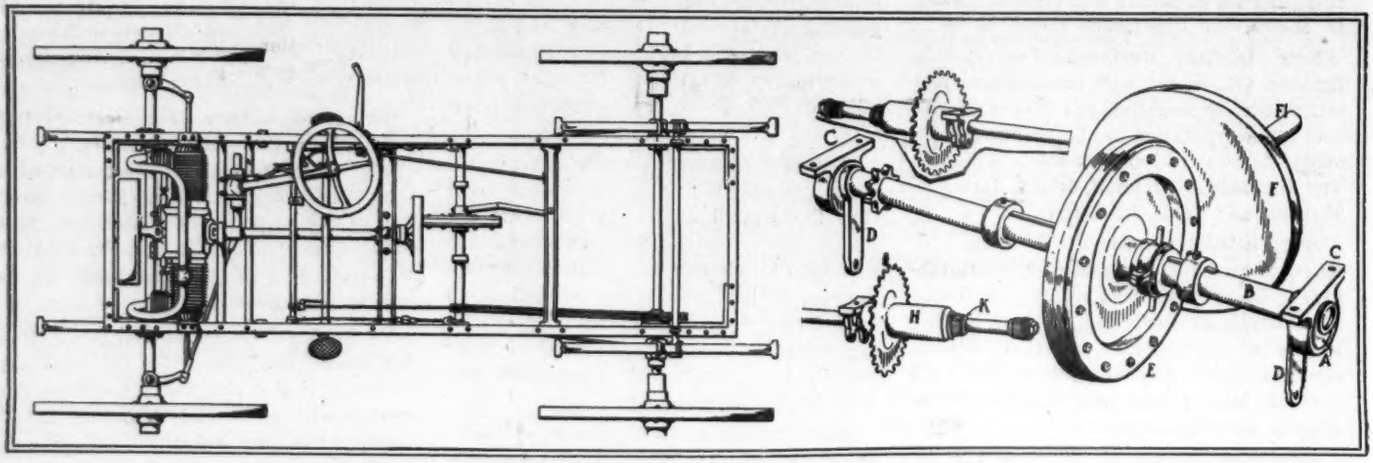
Panhard Oil Agents—George A. Haws has placed the agency for Panhard automobile cylinder oils and lubricating compounds with L. H. and B. I. Bill, 132 Valencia street, San Francisco, Cal., who will represent them on the Pacific coast, including California, Oregon and Washington territory; also with Leon Rubay & Co., 226 Columbus avenue, Boston, Mass.; and the George W. Nock Co., 126 North Fourth street, Philadelphia.

Imperial in New York—The New York agency for the Imperial roadster has been taken by the Haddington Motor Car Co. H. H. Treadwell, of East Williston, L. I., is president. His associates are A. E. Lauman, formerly with Wyckoff, Church & Partridge, and A. S. Watson, former secretary and treasurer of the Witherbee Igniter Co. A salesroom has been opened in the Motor Mart, at Broadway and Sixty-second street.

New Use for a Rambler—That the field of the utility motor car is constantly growing is proven by the new and practical uses to which it is constantly being put. D. C. Wilgus, a manufacturer in Los Angeles, Cal., and owner of a Rambler runabout model 22, claims he recently moved the entire equipment of a machine shop from its old location to a new one with this utility car. The equipment included planers, lathes and general machinery, aggregating $12,000 in value. The saving in truck expense, according to Mr. Wilgus, was great.

Faurote Joins Thomas Forces—The E. R. Thomas Motor Co., of Buffalo, announces the appointment of Fay L. Faurote as advertising manager. Mr. Faurote goes to the Thomas company with 5 years' experience in the motor field, and will immediately inaugurate an extensive campaign of Thomas advertising. That the industry is on the eve of one of its most prosperous years is the opinion of Mr. Faurote, who says in his 5 years' experience he never has seen a season which has opened with a brighter prospect for the sale of standard cars and the supply of the better class of cars will be far smaller than the demand.

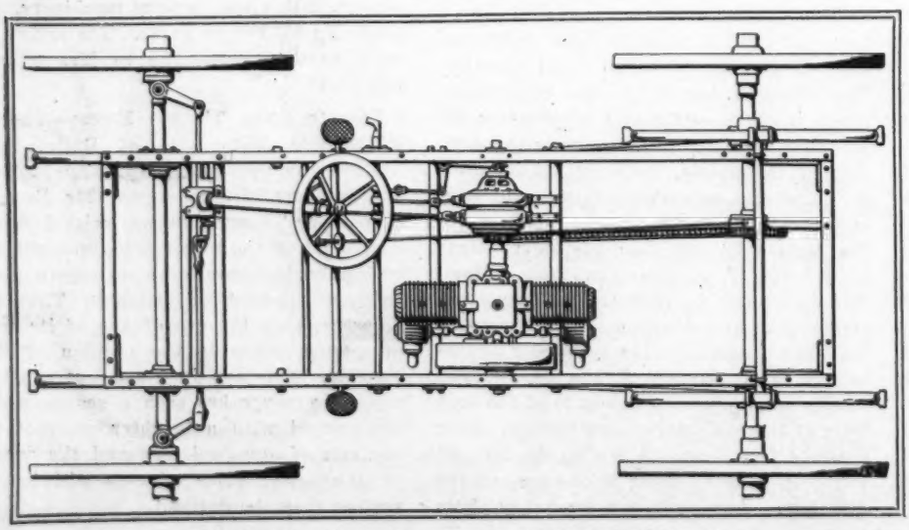
DEVELOPMENT BRIEFS



NEUSTADT'S FRICTION-DRIVEN MOTOR BUGGY AND DETAILS OF THE FRICTION GEARSET USED

NEUSTADT MOTOR BUGGIES

Among the latest productions in the motor buggy line is the variety of air-cooled chassis which the Neustadt Automobile and Supply Co., St. Louis, Mo., is offering, chief among which is one of the two-cylinder opposed air-cooled type, with the motor either placed transversely in front and coupled through a friction gearset and drive chain with the rear axle; or where the same style of motor is mounted amidship on the left side of the chassis and drives through a planetary gearset and chain to the live rear axle. In the former style, that with the motor crosswise in front, the crankshaft carries the flywheel in front of the crankcase and is continued to the rear—in the center of the car—where it carries a large-diameter friction disk. A transverse jackshaft crosses in rear of this disk and carries a sliding friction wheel adapted to contact with the disk face. The jackshaft carrying the friction wheel drives to the rear axle either by one chain, as illustrated, or by two side chains. The ends of the rear axle for side chain drive are illustrated, showing the Timken roller bearings K for supporting the road wheel and also the long sleeve H carrying the chain sprocket, which sleeve allows of carrying the driving chains close to the vehicle body and shortens the counter or jackshaft. When double side chain drive is required the differential gear is carried in the jackshaft close to the right end. The part of the friction transmission to merit attention is the method of pressing the friction wheel E tight against the face of the disk F so as to avoid slipping and to give a positive drive. This is accomplished by carrying the cross or jackshaft B in bracket C carried on the side members of the frame. Between the shaft and the brackets are eccentric bushings A, to which are attached the arms D so that by pulling on the arms D, the thick portion of the eccentric forces the shaft B forward, giving positive engagement. This is the first case known to Motor Age where the eccentric bushing is used for swinging the jackshaft. In any friction-driven machines the jackshaft swings; in some the disk is moved back, and in others there is a backward movement of the disk F and a forward movement of the friction wheel E. The friction disk F is a steel plate with an aluminum facing and the sliding wheel E has a specially prepared tire surface held in place by side flanges bolted on. In front of the disk F is a large ball thrust to take end pressure off the motor crankshaft. The wheel E is feathered on its shaft and is moved thereon by side lever whereas a pedal serves to carry the wheel forward against the disk face. Both styles of motor buggies use wheel steering, high wheels, full elliptic rear springs and conventional frame and axle construction.

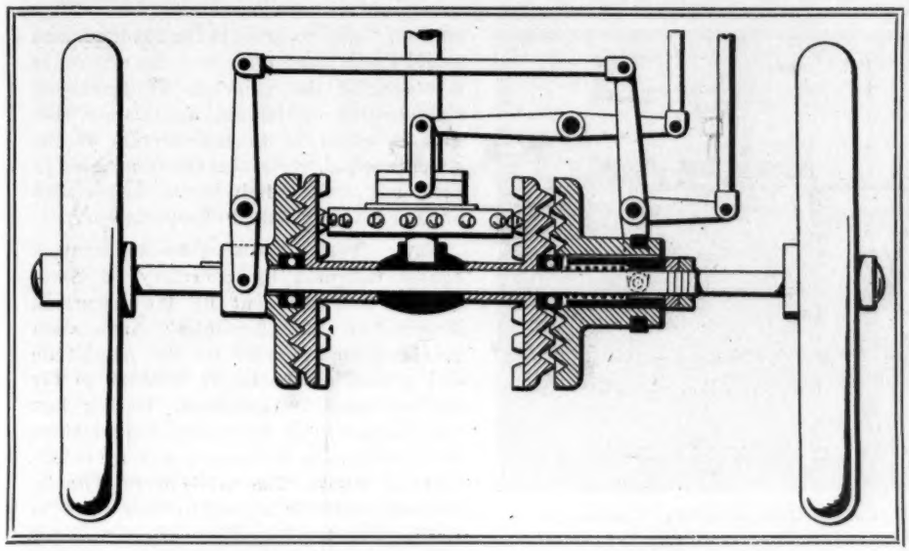


NEUSTADT'S MOTOR BUGGY WITH PLANETARY GEARSET

COVERS ENTIRE TREAD

In its Standard tire protector the Norris Auto Co., Saginaw, Mich., has a combination rubber and fabric tire protector that covers the entire tire tread as well as half of the casing at each side. It fits over the tire tread and is held in place by the natural inflation of the tire, no mechanical fasteners being resorted to. The body of the Standard protector is made of a specially woven sea island cotton fabric in combination with a tread surface of para rubber. An examination of a cross section of it shows a close resemblance to the cross section of a tire casing. The expansions at the edge of the tread are the fabric beads, made up of layers of the fabric encased in a harder curing of gum stock. These beads are claimed to exert a firm yet yielding pressure on the sides of the tire and to prevent creeping as well as the entrance of dirt between the tread and the tire casing. This protector can be used on a new tire to protect it, thereby prolonging its life. Placed on an old tire, it is calculated to increase its sphere of usefulnes.

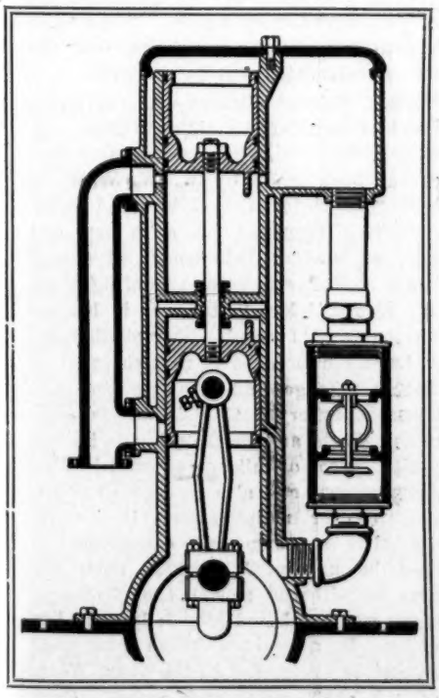
CURRENT MOTOR CAR PATENTS



BURGER'S REAR AXLE FRICTION DRIVE ARRANGEMENT

Rocking Motor Support—No. 874,405, dated December 24; to H. L. Ide, Springfield, Ill.—The car design referred to consists of a mainframe carried through a spring suspension on the car axles and also a cradle for carrying the motor. This cradle has two longitudinal bearings between it and the mainframe, one of which prevents relative longitudinal movement and the other which allows a limited amount of such movement. The movement permitted by such bearings eliminates the necessity of universal joints in the driveshafts.

Lock Nut—No. 874,544, dated December 24; to P. C. Schmidt, Hartford, Conn.—The end of the bolt has a transverse groove and in the top face of the nut are two opposite radial sockets. The locking device is a spring which fits into the bolt groove and has a pair of arms for extending into the sockets radial grooves in the nut. The top central part of the spring is made in loop form to increase its tension, thereby holding its ends in the nut sockets.

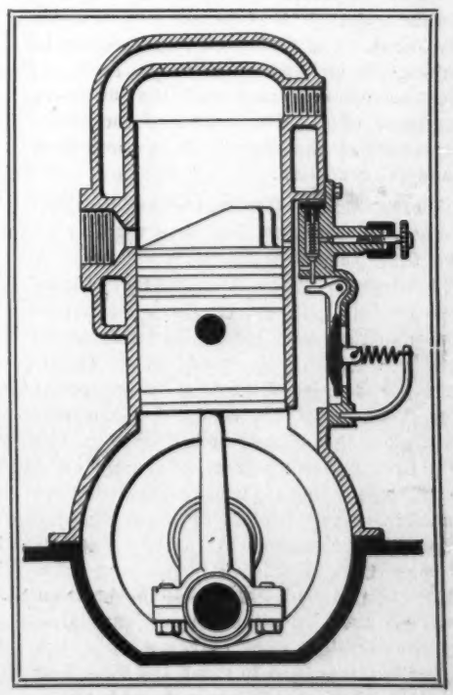


GERMAIN'S DOUBLE-PISTON MOTOR

Double-Piston Motor—No. 874,634, dated December 24; to W. A. St. Germain, Greenville, Me.—The cylinder is of double length and is divided into two cylinders—end to end—by a transverse partition. In each of the cylinders is a piston, both carried on one connecting rod, which works through a packing joint in the central partition. One end of the piston rod attaches through a connecting link to the motor crankshaft. The cylinder adjacent to the crankcase takes its mixture into the crankcase and thence by a bypass channel in the cylinder wall to the combustion chamber, whereas the outer piston gets its mixture from a separate compression chamber outside of the cylinder head. A double valve regulating means is inserted outside of the double cylinder, whereby the mixture is directed by these valves to one cylinder and then to the other. The valve system consists of two poppet valves on the opposite ends of a short stem, both valves working in unison, one regulating the passage to one cylinder and the other controlling that to the other cylinder, while the mixture enters the valve cage between them. The motor operates on standard two-cycle principles.

Friction Drive—No. 874,637, dated December 24; to F. Burger, Fort Wayne, Ind.—The motor crankshaft is extended to immediately in front of the car's rear axle, where it carries a friction wheel with a series of short radial pins extending from the center of the wheel rim. On the rear axle are friction disks with their faces carrying concentric grooves, with friction rings between the grooves. The friction disks on the right half of the axle is used for reverse speeds, that on the left half for forward speeds. Each friction disk has its rear face provided with radial teeth which correspond with the face of a sliding disk keyed to the axle and which serves to clutch the friction disk to the shaft. In driving forward or reverse the friction wheel is positioned by sliding forward or backward on the driveshaft, so its series of pegs fits into any one of the concentric grooves on the friction disk, and at which time the friction surface of the wheel bears on the friction disk at either side of the groove, thereby driving the car.

Two-Cycle Carbureter — No. 874,822, dated December 24; to H. R. Baird, Detroit, Mich.—In connection with a vertical two-cycle engine the inventor eliminates a carbureter of the recognized construction, but uses a gasoline pump scheme whereby gasoline of a predetermined amount is injected into the bypass channel and whereby at the same time, by the operation of an automatic valve, any desired amount of outer air is drawn in by the suction of the cylinder. The crankcase is used for compressing the mixture before delivering it to the combustion chamber. The air valve is of the poppet type spring controlled and it is interconnected with the gasoline injection device.



BAIRD'S TWO-CYCLE CARBURETER

FROM THE FOUR WINDS

Whipple Going to Coast—Harlan W. Whipple, former president of the A. A. A., is to make a flying trip to the Pacific coast to visit ex-Racing Board Chairman Temple, returning in time to attend the Ormond meet in March.

Lozier in Westchester Race—One of the first entries for the Westchester road race next April is that of the Lozier Motor Co. This car will be piloted by Harry Michener, who drove the Lozier car to victory in numerous events during the season past.

City of Buffalo Loses—The city of Buffalo has lost its test suit to determine the validity of the city's recently-enacted tax on motor cars. The tax is $5 a year and the city would have received a large amount of income from that source. The action was lost as a result of a recent decision of the appellate division of the supreme court in Rochester. The defendant in the case was Dai H. Lewis, secretary of the Automobile Club of Buffalo, who was chosen to be the trial defendant. He is backed by the club.

Peabody Made President—The annual meeting of the Massachusetts A. C. was held last Saturday night at its clubhouse on Boylston street, Boston. The following officers were elected unanimously: President, Frank E. Peabody; first vice-president, W. S. Shrigley; second vice-president, George E. Cabot; treasurer, George R. Alley; secretary, William A. Rolfe; executive committee for 3 years, Henry Ehrlich, David Rice and Henry A. Reuter; election committee, Ingersol Armory, Joseph B. Crocker and William M. Wood. The action of the directors in having the club resign from the A. A. A. was briefly discussed and the members approved of it. The report of the treasurer showed the club is in a prosperous financial condition.

Pierce Stunt in Germany—Castle Hohenzollern, in Germany, has been reached by the first American car, it is claimed. A 40-horsepower Pierce Great Arrow limousine of 1907 pattern, carrying seven persons and the chauffeur reached this castle late last month. George S. Rose, chauffeur for George M. Stumpp, a prominent New York florist, has returned to America with glowing accounts of his journey. The trip to the castle was taken partly on a dare and those who occupied the limousine were friends of Mrs. Stumpp, who was in charge of the party. The hill of more than a mile in length and from 13 to 17 per cent grade, had never been traveled over by an American car. One or two foreign cars carrying only the driver had managed to reach the top. The Pierce, weighing 4,150 pounds and carrying eight people, of an average weight of

CASTLE HOHENZOLLERN IN GERMANY

150 pounds, 5,350 pounds in all, reached the top without any trouble whatsoever. To get to Hohenzollern, if one goes from the direction of Stuttgart, it is necessary to go through the town of Heckington, a very old town built on the side of a hill, and with quite a few crooked, steep and narrow streets.

Dragons for Ormond—The two Dragon racers built for the Vanderbilt cup race of 1907 will be entered in the A. C. A. 288-mile cup race and the 100-mile Minneapolis trophy race at the Florida meet. They will be driven by John W. Haynes and R. G. Kelsey.

Orioles Banquet—Members of the Automobile Club of Maryland held their first annual banquet at the Belvedere hotel. The embryo plans for the erection of a new home were made known by the toastmaster, Osborne I. Yellott. In his address on "Greater Baltimore and the Automobile," Mayor J. Barry Mahool said the motor was a great factor in the building up of the suburbs of the city. Others who responded to toasts were W. W. Crocby, A. S. Goldsborough, Eugene O'Dunne, William D. Gill, Alfred M. Quick and Milton D. Greenbaum.

Pay on Repairs Only—A motion has been made in the supreme court of the United States by Attorney General Bonaparte for a review of the judgment of the United States circuit court of appeals in the J. T. B. Hillhouse case. The classification of motor cars that have been repaired abroad and brought back to this country by American tourists is the question at issue. The court decided in the Hillhouse case that where a motor car had been repaired abroad within less than 1 year before importation, duty need be paid only on the repairs and not on the old parts. "It is said by the treasury department," said the attorney general in submitting his motion, "that so great is the burden which would be imposed upon customs officers as a result of the principle of fractional classification established by this decision that it would be to the interest of the government to have the entire articles in such case as this admitted free rather than to have it thus assessed in separate parts."

New York's Strength—Registration figures compiled by Secretary of State Whalen and sent out by the American Motor Car Manufacturers' Association give convincing proof of the magnitude and growth of the motor industry so far as this state is concerned. During last year there was an increase in registrations of 2,331 and in licenses issued to chauffeurs of 2,051. The totals were: Registrations, 13,930 to 11,649; licenses, 9,386 to 7,335. The total number of New York registrations on January 1 was over 49,000.

Election at the Capital—The annual meeting of the Automobile Club of Washington for the election of officers for the ensuing year and the transaction of other business was held January 11. President R. B. Caverly was unanimously re-elected. The other officers elected were: Harrington Mills, vice-president; LeRoy Mark, secretary, re-elected; H. C. Chandlee, treasurer; Frank B. Pyle, captain; John Thomas, lieutenant; H. C. Hunter, W. D. West, Colonel C. E. Wood and A. G. Newmeyer were elected members of the board of governors. President Caverly read his annual report, which set forth in detail the progress made by the club during the past year. Reports of the other officers were of a satisfactory nature. Steps were taken to increase the membership of the club. A committee will do the work.

Claims Mileage Honors—A challenge, made to determine his right to the long-distance motor mileage and economy record, has been made by W. W. Watts, a Los Angeles motorist, architect and builder. "Fifty thousand miles in my Old Husky, a Rambler 1904 model, at a cost of only $200 for upkeep, excepting tires, is my record," Mr. Watts says in his announcement. "I would like challenging any American motorist to furnish proof of a better mileage and economy record." Thomas B. Jeffery & Co. will act as sponsors for Watts and in their hands he has deposited proof of mileage covered in four touring seasons and also an account of expenditures for maintenance. It is proposed that a competent committee of judges be appointed to pass upon the claims of all who accept the challenge. The car was purchased May 1, 1904, in Los Angeles. In a country where long trips are possible every day in the year, Watts averaged 12,000 miles each season. Once in Eagle Rock valley, Mr. Watts declares,

the Rambler was used to move a four-room house on rollers. During that performance the machine actually stripped the outer covering of rubber off both of the rear tires, it is said.

Megargel Turns Author—Percy Megargel, who has made three trips across the continent in a motor car, is writing a motoring novel in collaboration with Grace Sartwell Mason. This will be the first purely American motoring romance, the first to deal with the difficulties encountered by motorists in touring the great unknown west, where quicksands abound and the road becomes a trail.

Start a Good Roads Cry—Motorists, especially in the western section of Maryland, will be persistent in their efforts to secure new roads by legislation at the present session of the general assembly. They are co-operating with the road commissioners of Allegany county, with the result that a resolution bill has been framed calling for a bond issue of $125,000 for permanent road improvement, an equal amount to be secured from the state under the provisions of the Shoemaker fund. The main improvement which the motorists have in view is for a state road to reach from Flintstone to Grantville in Allegany county, in Maryland.

Long Tour in a Cleveland—James Laughlin, III, of Pittsburg, has just completed a 15,000-mile trip through the New England states and the middle west. Starting from Boston the party traveled north to Portland, Me., and from thence west through New Hampshire and Vermont into New York state and down the Hudson over into Pennsylvania, through the coal regions and then north to Buffalo; from Buffalo the route lay over the northern section of Ohio and Indiana to Chicago, from which city they returned to New York via the so-called Holcomb route over which the late Bert Holcomb established the first Chicago-New York record. After climbing Giant's Despair at Wilkes-Barre the Laughlin party started for Buffalo over roads that were, to use Mr. Laughlin's description, unspeakable. Florida will be the next field for operation, as Laughlin is now on his way to the south and has with him a 1908 Cleveland roadster with which he will tour the state and enter in the speed trials at Ormond Beach in March.

A. C. A. Banquet Date—The annual banquet of the Automobile Club of America has been set for Saturday, January 25. These dinners have hitherto been held at Sherry's or the Waldorf. The coming one, however, will be given in the great assembly room of the club's new house. Delmonico will be the caterer. In appreciation of France being the cradle of the motor car the guest of honor will be the French ambassador, Jules Jusseraud. The other speakers will include Senator Chauncey M. Depew, Augustus Thomas, Job E. Hedges and Patrick Francis Murphy.

Elliot Lee Elected—Elliot C. Lee, formerly president of the A. A. A. and also of the Massachusetts A. C., was elected president of the Bay State A. A. at the annual meeting. There were two candidates in the field, but Mr. Lee won easily. Vice-President Harlan W. Whipple, Treasurer Harry Knights and Secretary James Fortesque were re-elected. The board of directors elected is: G. W. McNear, J. C. Kerrison, J. W. Maguire, Dr. J. Hovestadt and A. P. Underhill. The officers intend to bend their energies to build up the club, as it is not as prosperous as they feel it should be.

Aids Uncle Sam in Arizona—Lieutenant Gimperling, of the Twenty-first infantry, H. M. Wescott and Arthur Harris have started from Denver in a Stoddard-Dayton touring car on a 1,000-mile trip to Fort Huachuca, Ariz. Lieutenant Gimperling has been detailed by General Thomas, commander of the department of Colorado, to make a progressive military map of southern Arizona and the lieutenant is making the trip in a motor instead of the old-time covered army wagon. From 20 to 25 miles an hour will be covered. Their objective point, Fort Huachuca, is in the south central part of Arizona. At the fort they will be given an aide to escort them. A mess wagon and a detail of troopers will accompany them through the country. The Stoddard will be used for the entire trip. The machine is not owned by the army, but is the property of Mr. Wescott, who is a personal friend of Lieutenant Gimperling.

Farmer Wins Big Prize—According to a cablegram, Henry Farman, the French aeronaut and motorist, won the Deutsche-Archdeacon prize of $10,000 by making a circular kilometer in an airship heavier than air last Monday. The successful flight was made in the presence of an official committee of the French Aero Club. The time was 1 minute 28 seconds.

Universal Lights—England's lights on vehicles act of 1907 went into force January 1. All vehicles traveling on highways must carry at least one white lamp on the off side, visible for a reasonable distance in the direction of travel. Vehicles having a load projecting more than 6 feet to the rear must display a rear red lamp, and rear white lamps are prohibited, even if shown through the back of the front lamp or lamps. The lamps must be lighted between 1 hour after sunset and 1 hour before sunrise. Conviction for any offenses under this act carry a $10 fine for a first offense and $25 for a second or subsequent conviction.

A. A. A. Executives Meet—Nothing of a startling nature came of the January meeting of the A. A. A. executive committee meeting in New York. The association promised to assist the promoters of the New York-Paris test and Jefferson de Mont Thompson, Frank B. Hower and F. H. Elliott were delegated to represent the A. A. A. at the start, February 15. The proposed speedway at Lakewood, N. J., was favorably commented on and it was decided hereafter to hold the monthly meeting the first Thursday of each month. There was a general discussion relative to the finances of the association, and the accounts receivable as shown by the secretary's report, are approximately $6,000, divided as follows: Dues owing by clubs and associations, $3,230.25; receipts from advertising, $1,207.25; $300 from the Class Journal Co. and $1,500 estimated royalties on the 1907 blue book.

UNITED STATES ARMY MOTORING EXPEDITION IN THE WILDS OF ARIZONA—LIEUTENANT GIMPERLING AND THE STODDARD-DAYTON

LEGAL LIGHTS AND SIDE LIGHTS

NEW YORK WANTS NEW LAW

New York motorists are to strive for the passage of a new motor law in the Empire state, which will radically modify the speed laws and the present system of registration. At a conference of the New York State Automobile Association held at Albany last week, Charles Thaddeus Terry, W. W. Niles and Oliver A. Quayle were appointed a committee to draft a new motor car bill. The new bill will be based on the uniform state motor bill, drafted by Mr. Terry, to be urged by the A. A. A. as a basis of future legislation in all the states. It is proposed to have an annual registration fee to take the place of the present fee of $1, which now, once paid, need not be subsequently renewed. This fee is to be based on the weight or horsepower of the car, and will range from $1.50 to $3. The reason for such a fee is that motorists are willing to pay their share toward the maintenance of good roads. It is proposed also to change the speed law so no person shall drive a motor vehicle at a rate of speed greater than is reasonable and proper, having regard for the width, traffic and use of the highway and the general rules of the road, or so as to endanger property or the life and limb of any person. If it be necessary to state any speed safety limit a maximum of over 25 miles an hour in municipalities or built-up sections, when continued for over half a mile is favored, and in the open country a speed of 30 miles an hour will be considered proof of negligence. New penalties are to be provided as follows: For the first offense, a fine not exceeding $50; for the second offense a fine not less than $50 or more than $100, or imprisonment for 30 days, and for the third offense a fine of not less than $200 nor over $300, or imprisonment for 90 days. Among others present at the conference were: President Hotchkiss, of the A. A. A.; S. M. Butler, secretary of the A. C. A., and Russel A. Field, secretary of the Long Island Automobile Club.

BAY STATE BOGEY AGAIN

That old bugbear that gave the motorists of Massachusetts such a scare a year ago cropped out again when Governor Guild in his inaugural message declared the present tax of $5 on each car was inequitable and something should be done to remedy it. Now it looks as if the fight will be waged all over again. The motorists have only themselves to blame, for when the taxation committee was hearing the matter the owners of cars never put in an appearance to remonstrate. Only after the matter reached the last stage in the legislature was anything done, and then the $5 tax bill was passed and Massachusetts motorists had to pay three taxes in a year, amounting in all to $12. This, in addition to their license fee to drive, added a couple of dollars more, and the state got about $150,000 revenue. The horsepower bill is thought by many to be a political move to give positions to men as engineers and examiners, and it would cost the state a big sum to equip plants for testing out the cars. The governor also recommends other legislation in regard to the highway commission. So the legislature is pretty certain to be flooded with anti-motor bills this year. It is now proposed to have a convention of motorists and delegates from factories making accessories throughout the state, at the time of the Boston show, to prove to the members of the legislature that there are many men dependent upon the industry in this state and upon whom many of the members of the legislature depend for votes for election.

WOULD PUNISH COWARDS

One of the new recommendations that will be put up to the Massachusetts legislature when it gets down to business in a few weeks will be a bill that will allow judges throughout the state to inflict jail sentences on motorists who hide their number plates. The bill will have the backing of the Safe Roads Association, a body comprised of motorists who have the interests of motoring at heart. Already the association has brought a number of reckless drivers to justice and had them fined and their licenses revoked. The law at present in Massachusetts allows imprisonment for operating a car without a license, or when intoxicated, or after a license has been revoked. The only punishment for trying to conceal a number plate is a graduated scale of fines of $25, $50 and $100 for first, second and third offenses, respectively. The Safe Roads Association has been investigating cases where false numbers have been substituted for regular ones and has secured evidence that will bring about some convictions. In view of the number of accidents in Massachusetts recently, particularly in Boston, the committee in charge of the investigations think if a severer penalty were imposed for hiding the numbers the list would be reduced the coming year. It has found that in some cases where accidents have happened witnesses have been unable to note the number of the car because it was either covered or swung in such a way that it could easily be taken for another number by the officers of the law.

DECIDES AGAINST MOTOR CAR

Rather surprising is the decision just handed down by Judge Wheeler of the superior court of the county of Hartford in the case of Heim vs. Cheney. As already noted in Motor Age, Edward Heim, last August, while proceeding through Market street in Hartford, Conn., collided with a motor car owned by Thomas L. Cheney, of South Manchester, and driven by his chauffeur. It appears Heim lost control of the machine, crashed into the motor car and sustained injuries of a permanent nature. The suit followed. Heim alleged Mr. Cheney's driver was negligent despite the fact the latter, while on the right side of the road and proceeding at a moderate pace, altered his course and reduced speed to prevent the accident. Heim crashed into the car, however. No attempt was made to evade responsibility. The case came up before Judge Wheeler and on account of the prominence of the defendant attracted much notice. The judge filed a decision statement under which Heim is entitled to $1,400 for his injuries. Joseph L. Barbour, counsel for Mr. Cheney, immediately filed notice of an appeal.

JERSEYITES PLAN AMENDMENTS

As a result of a meeting of the New Jersey Automobile Association at Trenton the following amendments to the Frelinghuysen law were proposed: First—All horse-drawn vehicles to carry lights at night. Second—Motorists of foreign states to be given 10 days' right to tour state without registering here. Third—All licenses to run out December 31 of the year and tags to be furnished by the state. Fourth—A higher fee for licenses, to go to the highway commissioner for road repairs. Fifth—Making it a misdemeanor for a drunken man to drive a machine, and for any to throw glass or other brittle substances on the roads. Sixth—All fines must be reported to a motor car inspector the day fine is imposed and all moneys from fines turned in within 30 days. Seventh—Abolition of the personal registration idea, thus saving state about $30,000 for maintaining offices over state.

TOLEDO LAW INVALID

The ordinance regulating the speed of motor cars in the city of Toledo was this week declared invalid by Police Judge Austin. T. H. Tracy was tried in the police court upon a charge of violating its provisions and was discharged. His defense was that the city ordinance was in conflict with the state law. Judge Austin announced that in his opinion the contention was good, and that the ordinance was invalid. It is probable that future offenders will be prosecuted under the state law, which amply covers the subject,